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Family Olive
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CALIFORNIA HORTICULTURE

BY
GEO. C. ROEDING.

ABOUT WEIGHTS AND SHIPPING



The question of freight charges to distant points is a matter of serious consideration, and we are therefore submitting a few figures to give a clearer insight into the subject.

The general run of deciduous fruit trees, either in bales or cases, average about as follows: 6 to 8 ft., 2 pounds each; 4 to 6 ft., 1½ pounds each; 3 to 4 ft., one pound each; 2 to 3 ft., 1½ pounds each; Grape Vines, 1-3 pound each.

Deciduous ornamental trees from 6 to 8 ft. and up to 12 to 15 ft., 3 to 10 pounds each.

Potted plants in from 3 to 6 inch pots, packed in boxes, weigh from 4 to 12 pounds each.

Citrus trees, balled, packed in boxes, 40 pounds each, with naked roots, 3 pounds each.

Palms, packed in boxes, with ball of earth, 2 to 3 ft. plants, 40 pounds, and gradually increasing to 110 pounds each on 5 to 6 ft. plants.

Grape cuttings 14 to 16 inches long, 80 pounds to the thousand cuttings, in either bales or boxes.

Eucalyptus, cypress, about 100 to the flat, 50 pounds per flat; hedge plants from 50 to 100 to the flat, according to size, 50 pounds per flat.

APPROXIMATE PACKING CHARGES

It is difficult to give these charges accurately, as they will vary more or less according to the condition of the trees. However, the figures given are taken from our records of charges for the run of shipments for sizes specified: 6 to 8 ft. trees in bales, \$2.25 per 1000; 4 to 6 ft. trees, \$1.75 per 1000; 3 to 4 ft. trees, \$1.50 per 1000; 6 to 8 ft. trees completely boxed, \$5.00 per 1000; 4 to 6 ft. trees, \$3.00 per 1000; 3 to 4 ft. trees, \$2.50 per 1000.

Grapevines in bales, 50 cents per 1000 vines; in cases completely boxed, \$2.00 per 1000 vines.

Deciduous ornamental trees, 6 to 8 ft. and up to 12 to 15 ft., in bales, from 30 to 40 cents per 100, and completely boxed, 50 cents to \$1.00 per 100.

Potted plants in from 3 to 6 inch pots, from 2 to 5 cents each.

Citrus trees, balled, packed in boxes, tops protected with burlap, 7½ cents per tree, boxes hold from 10 to 12 trees; in cases completely boxed, 10 cents per tree; naked roots packed in moss in boxes, tops burlaped, 1 cent per tree, completely boxed, 1½ cents per tree.

Palms, balled, in boxes, tops burlaped, from 5 to 20 cents per plant, according to size.

Grape cuttings packed in bales, 20 cents per 1000 cuttings, and in cases completely boxed, 35 cents per 1000.

Eucalyptus, cypress and hedge plants, tops covered with burlap, in flats, 15 cents per flat.

As has been previously stated, the weights and packing charges given are merely a general average, and this data is supplied for the purpose of placing our customers in position to figure out about what their stock will cost them delivered at destination. We desire to assure our patrons that we only charge for packing to cover the cost of material used.

FREIGHT CLASSIFICATION

It may not be generally understood that the method of packing a shipment of trees or plants is the basis on which freight charges are made. Nursery stock in bales or boxes completely covered with tulle or burlap takes the first-class rate, while in cases completely boxed the third-class rate applies. When trees are shipped without packing, the classification requires the payment of the double first-class rate.

In carload lots with a minimum of ten tons, class C applies, and this is as a rule from 50 to 75 per cent. less than the first-class rate.

For local shipments in California, trees are either packed in bales, wrapped with tulle or in boxes, with tops protected with burlap, for the difference between the first and third-class rates is so slight that nothing would be gained by boxing, for the increased cost would more than offset the saving in freight charges.

To distant points in Texas, Mexico, Colorado and other States and countries outside of California, when stock is to be a long time in transit, it is packed in paper lined cases, not only with a view of having the trees carry better, but also because of the saving in freight charges, the difference in classification being in many cases \$1.00 per hundred pounds.

We have made a very close study of traffic conditions, and our knowledge is used to secure in all cases the very lowest freight rates for the benefit of our customers.

No accurate data can be given as to freight charges on orders for export, except that in a general way a shipment by water to Australia or Japan from San Francisco, will cost about one-third less than it does from Fresno to San Francisco, a distance of 206 miles.

PERSIMMON

PRICE 25 CENTS.

CALIFORNIA HORTICULTURE: THE FRUIT GROWERS' GUIDE

ISSUED BY THE

FANCHER CREEK NURSERIES

PAID UP CAPITAL \$200,000

INCORPORATED

GEORGE C. ROEDING
PRESIDENT AND MANAGER

The Roeding Place, 640 acres.....six miles east of Fresno
Propagating Grounds, 130 acres..three miles northwest of Fresno
Gen. Fruit Tree Nursery, 640 acres... fifteen miles east of Fresno
Citrus Orchards and Nurseries, 160 acres..Exeter, Tulare County



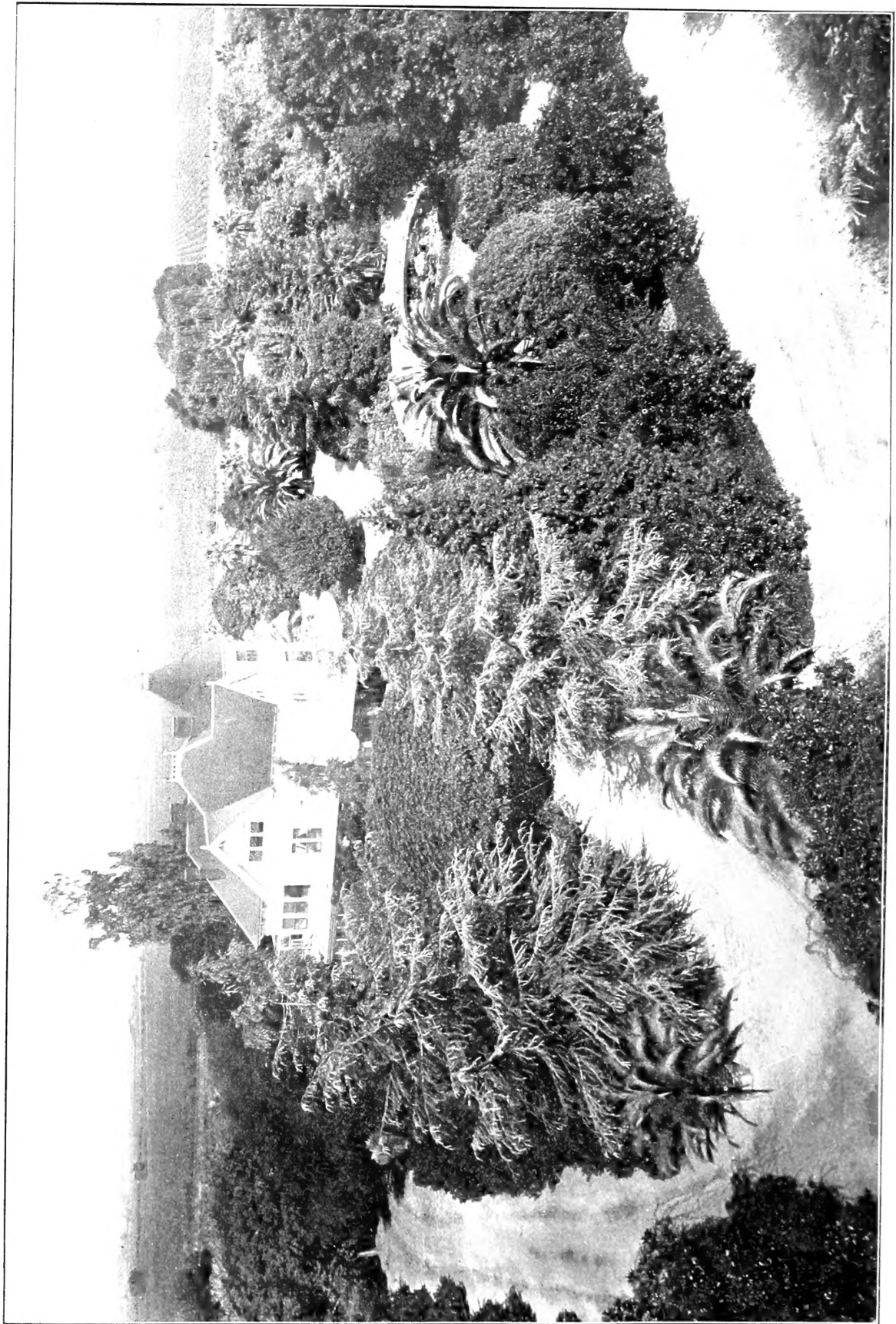
— 1909 —

TELEGRAPH, POSTOFFICE AND EXPRESS ADDRESS :

1225 J ST., FRESNO, CALIFORNIA, U.S.A.

CABLE ADDRESS: "CALIMYRNA."

WESTERN UNION CODE. NURSERYMEN'S TELEGRAPHIC CODE.



THE ROEDING HOME PLACE, 640 ACRES IN BEARING.

This picture shows the home and ornamental grounds; in the distance a 250-acre vineyard on phylloxera resistant roots; to the right are the extensive olive orchards; to the left the 200-acre *Calimyrna* fig grove.

THE RECORD OF THE YEARS.

THIS newly revised edition of what was the annual catalogue of the Fancher Creek Nurseries is itself a manifestation of the supremacy of California horticulture over that of any other country of like area; indeed, it is an exponent of the fact that the Golden State produces certain horticultural products, namely Smyrna figs, raisin and wine grapes, oranges and lemons, apricots, prunes, walnuts, olives, etc., in excess of the remainder of the United States; it is also an evidence of the marvelous development of this establishment, which has ever kept abreast of the times, meeting every demand that has been made upon it in the way of trees and plants, calculated to fill the exacting demands of the market and the grower. Owing to this, its annual catalogues have outgrown the mere enumeration of nursery stock and assumed the importance of treatises on horticulture, detailing the practices that have made California fruit culture famous. For this reason we have rewritten the matter, supplementing the plant descriptions with cultural directions, giving to the text an array of colored and halftone pictures beyond the requirements of a catalogue. With this advance we have also changed the title, giving the book a dignity in keeping with its present character, viz., "CALIFORNIA HORTICULTURE: THE FRUIT GROWERS' GUIDE," the price of which is nominal, 25 cents. In addition we also publish a Catalogue and Price List, which is to be had on application.

Aside from these facts, however, The Fancher Creek Nurseries possess an individuality peculiarly their own, and for which an appreciative public has in large measure given ample recognition. It was on the grounds of this establishment that commercial Smyrna Fig culture found its fruition in successful fig caprification by the introduction of the little fig wasp (*Blastophaga grossorum*) and its host plant the wild or Caprifig; an event which is destined to make California the sole source of the Smyrna fig supply in this country,—a consummation which is daily developing and expanding in that direction.

Another feature of its enterprise and sagacity is the introduction, propagation and dissemination of phylloxera resistant grape vines obtained from the breeding grounds of leading European vineyardists. Keenly alive to the fact that this disease is gradually spreading and that the ultimate success of the vineyards of the country depend upon resistant varieties, it is now growing the best sorts in large numbers, a considerable acreage being devoted to this department of the business.

It is also the authorized commercial propagator and distributor of many of Luther Burbank's new fruit introductions, numbers of which have become recognized standard varieties. These new fruits appearing from time to time possess an interest appealing alike to the amateur plant lover and the commercial grower.

Taking these facts into consideration, it is not at all surprising that our correspondence from the South American countries, from our Island Possessions, Australia and even from Europe, should also be a growing factor. Indeed, so pronounced has been the demand for information concerning California horticultural practice, that it is necessary to publish an abridged edition of our regular catalogue in Spanish, copies of which are to be had on application.

Long experience has enabled us to handle trees and plants along lines calculated to insure their arrival at points of destination in good condition. Single shipments from our establishment have at times been three months in transit and still arrived in good shape, growing well when properly handled and planted out. On the strength of this, orders are solicited from planters in the South American States, Old Mexico, Australia the Philippines, Cuba, Porto Rico, the Islands of the Pacific and from Europe.

IMPORTANT THINGS TO OBSERVE.

1. All orders should be legibly written on a separate sheet of paper, and not mixed up with the body of the letter.

2. In ordering please state whether substitution will be permitted, as we feel at liberty when no instructions accompany the order to replace with other sorts as nearly similar as possible.

3. A few words of explanation of the foregoing, is in our opinion advisable, for customers on some occasions have made very serious objections to our exercising this privilege when it was really our desire to serve them to the best of our ability. It must be borne in mind that nursery stock must be grown from two to three years in advance, and it is largely a matter of guesswork on our part, what varieties will be in demand. Years of experience have taught us to lay down certain defined rules, and of standard commercial sorts of fruit trees our aim is to grow sufficient stock to meet ordinary requirements from year to year. It often happens that a variety of which we grow only a limited quantity is exhausted early in the season, and as it may be impossible to secure it from other nurseries, it is either necessary to cancel the order or substitute with another kind, which is similar. In nearly all cases when we exercise our judgment, we do not hesitate to say that we believe our customers will approve of our desire to please them.

4. Our packing and labeling are as perfect as possible, and we charge for the same only to cover the cost of material. All goods are delivered at the railway or express office free of charge.

5. State distinctly how you wish us to ship—by freight or express; also designate the route, otherwise we use our own discretion in forwarding.

6. After delivering to the carriers we cannot hold ourselves responsible for any loss or injury to trees or plants after they have been carefully packed and shipped; but we will do everything in our power if any loss should occur for the protection and recovery of our customer's property.

7. Orders to be sent by express, C. O. D. will be filled, provided one-half of the amount is sent with the order.

8. If any mistakes are made in filling orders, we will cheerfully rectify the same, but must respectfully request our customers to notify us at once; **or, at the most within ten days after receipt of the goods.**

9. Orders from unknown correspondents must be accompanied by a remittance or satisfactory reference.

10. We uniformly tie our trees in bundles of 10, and grape vines in bundles of 50; and we suggest to our patrons to make their orders for assortments as far as possible in multiples of these numbers.

11. Articles mentioned in the following list will be furnished at prices named as follows: 5 at the 10 rate; 50 at the 100 rate; 500 or more at the 1000 rate. Less than 5 of a variety at the single rate. This does not mean, as an illustration, that 10 pears, 10 apples, 10 plums, 10 nectarines would be charged at the 100 rate. To secure this rate it will be necessary to order 50 trees of one sort.

ARTICLES BY MAIL.

For the convenience of those who can not be reached by railroad or express, packages of small trees, if in stock, not exceeding four pounds in weight, can be forwarded by mail, such articles to be charged at single rates, postage additional.

PRICE LIST.

For the convenience of patrons we also publish annually a price list of all the Fruit and Forest Trees, Shrubs and Vines, Palms and Roses enumerated in this catalogue. When ordering, always consult this for prices.

GUARANTEE OF GENUINENESS.

In growing and furnishing all nursery stock, every care and precaution is exercised to have it true to name; still with all our care, mistakes are liable to be made, but we hold ourselves in readiness, on proper proof, to replace all stock that may prove untrue to label, free of charge, or to refund the amount paid. This statement is due notice to purchasers of nursery stock of the extent of our liability after the same has been accepted by the buyer.

A NOTE OF WARNING.

Those only who can show proper credentials are authorized to solicit orders for us. We wish to call special attention to this notice, as we know it has heretofore been the practice of unprincipled persons, to procure the catalogues of prominent nurseries, and take orders in their names, which they fill from poor stock bought elsewhere. If our patrons will notify us of any person whom they have reason to believe is not a regularly appointed agent, we shall consider it a favor.

IMPORTANT.

Please remember to write your name, postoffice, county and state as distinctly as possible; also give your nearest express office and railway station, or if on a stage route send us special directions, giving us the name of the transportation company delivering the goods. Orders for export to old Mexico, the Hawaiian Islands, Cuba and South American points should give in addition to the above, the steamship routes by which their orders are to be shipped.

All remittances should be sent by postoffice money order, registered letter, express order or bank draft.

ADDRESS ALL CORRESPONDENCE :

FANCHER CREEK NURSERIES,

(INCORPORATED)

GEO. C. ROEDING,
President and Manager.

FRESNO, CAL. U. S. A.

WHEN TO PLANT AND HOW.

IN California radical differences in soil and climate are often to be met with in the same orchard, and one locality is often blessed with as great a diversity as may be found in a whole State east of the Rocky Mountains. Hence local horticultural conditions are of prime importance when planting for profit is the consideration. Indeed, it is our experience that it is the very keynote to the successful prosecution of fruit culture as applied to California and the Pacific Coast.

Taking it for granted that the intending planter is reasonably familiar with local conditions prevailing in his locality and on his land, a few suggestions on methods of planting will be found timely. Obviously it is of the utmost importance that the land be put in first-class condition to receive the trees. This is accomplished by thorough plowing followed by harrowing until the soil is friable as an ash heap. Nothing is so beneficial to soil as sub-soiling, though planters are often deterred from incurring this additional expense, but where time and conditions will permit, it will do more to promote a fine deep root system and an unusually heavy growth, than any other one thing that can be done in the preparation of the soil. A sub-soil plow merely consists of a standard about twenty inches long attached to a wooden beam like an ordinary plow, except that it is heavier. It has no mould-board but merely has a flattened piece of steel at the lower end of the standard which is slightly concaved so as to lift the soil as it passes underneath. It runs in a furrow made by a single plow, and at a depth of 18 to 20 inches. It requires from ten to twelve good animals to pull it.

Where irrigation is practiced grading must be resorted to, so that all spots will be accessible from the laterals running from the main ditch. Grading does not necessarily mean leveling, for the less the surface soil is moved the greater will be the ultimate success of the undertaking. No greater mistake can be made than to cut down the surface of the land for several feet in order to bring it under a ditch. It is far better under such conditions to pump the water from a ditch to the higher level and thus preserve the land. The slight additional expense of pumping will be more than counterbalanced by the growth of the trees and their fruitfulness as compared to the poor growth and lack of fruit when the surface soil has been removed to any depth. Drainage should be given consideration, particularly if the land is low and liable to have water stand too closely to the surface during the spring and summer months.

TIME TO PLANT.

Early planting is always advisable in this State with deciduous fruit, forest trees and shrubs. We do not recommend fall planting for the reason that our growing season often extends into the month of December and to dig up trees until the growth is checked by frost, which rarely occurs before the latter part of November, is a very risky proposition. In the case of citrus trees and evergreens, plantings should commence in the late spring and may continue until the early summer months. Preceding the descriptive paragraphs of the different fruits, the reader will find a few cultural directions as applied to particular sorts, to which attention is directed.

SELECTING NURSERY STOCK.

This is not over difficult if the planter is reasonably familiar with the character of the land which he is to devote to fruit culture, together with its climatic conditions. Where patrons are in doubt as to varieties, if they will write us of their local conditions, we shall be pleased to

make a selection, subject of course to their approval. We aim to supply well grown, straight and healthy trees and vines with a strong vigorous root development, free from insect pests and disease, and invariably true to name. We do not grow "cheap" trees, because such are expensive to the planter if tendered to him as a gift, and are always a source of dissatisfaction and after recrimination between sellers and buyers. You cannot extract sunbeams from cucumbers, neither can you produce fine fruit from a stunted and badly grown nursery tree. In taking up nursery stock we exercise every precaution to avoid exposure of the roots, so as to maintain the vigor of the tree.

TREATMENT WHEN RECEIVED.

The trees when received at point of destination should be immediately unpacked and the roots laid in a trench and well covered with soil which should then be thoroughly wet down. If delayed in transit, thereby becoming dry and suffering from exposure, (the bark showing signs of shriveling) it is a good plan to immerse the trees in a tank over night and the following day bury root and top completely in damp soil for a few days until they become normal, when they may with safety be planted out. Should trees be frozen while in transit, place the package in a cellar or some other place free from frost until thawed out, when they can be unpacked and heeled in, preparatory to planting. Trees treated in this manner will not be injured by having been frozen.

In localities where the seasons are very much later than ours, due to higher elevation or to the difference in latitude, it is far better to permit us to forward stock while in the dormant condition. If purchasers will be kind enough to call our attention to the fact that extreme cold weather will not permit of early planting, we will defer shipping their order as late in the season as it is safe for us to do so. The shipment on arrival at destination should be examined by removing a board from the case, and if the roots appear to be in good condition, the contents should remain undisturbed and the case should be placed in a cellar or in a cold storage plant where the tem-

NUMBER OF TREES OR PLANTS ON AN ACRE.

DISTANCE APART.		Square Method	Equilateral Triangle Method
Distance,	1 foot apart each way, No. plants	43,560	50,300
"	2 " " " " "	10,890	12,575
"	3 " " " " "	4,840	5,889
"	4 " " " " "	2,722	3,143
"	5 " " " " "	1,742	2,011
"	6 " " " " "	1,210	1,397
"	7 " " " " "	888	1,025
"	8 " " " " "	680	785
"	9 " " " " "	537	620
"	10 " " " " "	435	502
"	12 " " " " "	302	348
"	14 " " " " "	222	256
"	15 " " " " "	193	222
"	16 " " " " "	170	196
"	18 " " " " "	134	154
"	20 " " " " "	109	125
"	25 " " " " "	69	79
"	30 " " " " "	48	55
"	35 " " " " "	35	40
"	40 " " " " "	27	31

RULE SQUARE METHOD—Multiply the distance in feet between the rows by the distance the plants are apart in the rows, and the product will be the number of square feet for each plant or hill; which, divided into the number of feet in an acre (43,560) will give the number of plants or trees to an acre.

RULE EQUILATERAL TRIANGLE METHOD—Divide the number required to the acre "square method" by the decimal .866. The result will be the number of plants required to the acre by this method.

perature should be maintained at about 35° fahrenheit. This method of handling trees is thoroughly practicable, so much so that we have found it possible to ship trees to the antipodes during our winter season and have shipment on arrival there placed in cold storage until the opening of the planting season.

PREPARING TREES FOR PLANTING.

Just immediately before planting, be sure to examine the roots carefully, and cut away to a smooth surface all bruised, lacerated and broken roots and rootlets with a sharp knife. The tree can now be said to be ready for its permanent orchard home.

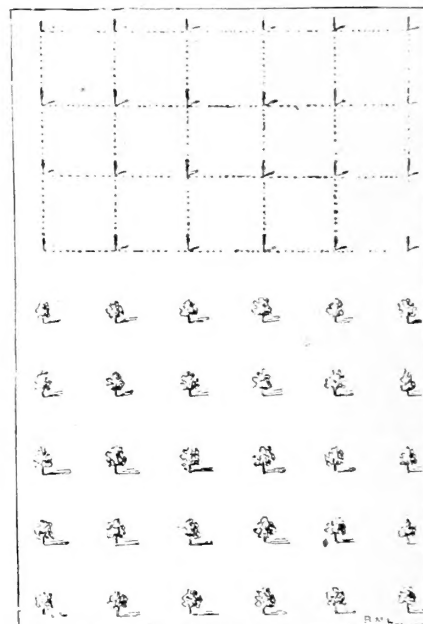
If planting is delayed through circumstances beyond the control of the orchardist and a warm spell should intervene in February or March, causing the buds of the trees or vines to start, remove them from the trenches, shake out all the dirt from the roots and expose them for three hours in the morning on a calm day to the rays of the sun. This will cause the small white rootlets which have started, to dry up, and if the trees are heeled in, (wetting them down of course) in a shady place their dormancy may be prolonged several weeks. In setting out one person should hold the tree in an upright position against the notch in the tree setter, while another shovels or fills in the loose soil around it, first spreading out the roots and rootlets in as natural a position as possible. The surface or friable soil should be put in first among the roots, care being taken to fill in every interstice, thus bringing all the roots in direct contact with the soil. When the hole is two-thirds full, firm the earth thoroughly about the roots, but before doing this draw the tree up to its permanent position. The top three to four inches of soil should not be tramped. A basin should be scooped out around the tree which will hold at least 10 gallons of water and unless heavy rains should intervene to fill it up, water should be applied either by bucket or by irrigation. The following day draw in loose soil to fill up this basin, reducing it to a fine condition of tilth and do not tramp in. Guard against setting too deeply but allow for the settling of the soil, so that when once established the tree will stand about as it did at the time of removal from the nursery rows. In the hot interior valleys of this State, it is also very important to protect the trunks with Yucca tree-protectors until they can supply their own shade.

HOW TO PLANT.

As has been suggested previously in this introduction above all things have your ground in the very best condition of tilth. The importance of this one point cannot be dwelt upon too forcibly, for it not only insures more rapid work on the part of the men setting your trees, but in addition to this, not having any clods to contend with, the fine loose soil packs around the roots, when tamped in, and if for any reason there should be no opportunity of settling the trees with water after planting there is very little danger of their drying out.

Before proceeding with the planting of an orchard or vineyard the land should be laid off having one side and end of the field at right angles. When there are no regular subdivisions to work from, and particularly where extensive plantings are to be carried on, these base lines should be established with a transit. Nothing is more unsightly than to have your trees or vines out of line, and by following out the suggestion of having these base lines at right angles, there is very little probability of this occurring. There are two methods of planting, the square which is the one most universally used, and the equilateral triangle, both of which are illustrated herein. A stake about half an inch square and one foot long, split out of redwood, will be found to be a very convenient size as a marker for the setting of the trees. Dip about six inches of one end in whitewash, as they can then be readily seen, and should any of the stakes be out of line it will be noticed at once. Before digging the holes it is neces-

sary to have a tree setting board. This is easily made out of a piece of 1x4-4 foot long with an inch hole at each end and a notch in the center. Place the notched center against the stake where the tree is to be planted and push a stake into the ground through the holes at each end of the planter and remove the center stake. The hole may now be dug and this should not be less than 18 inches in diameter and 18 inches deep. After the hole is dug, replace the board over the end stakes in its former position, then plant the tree with the trunk resting against the center notch in the board and it will be in identically the same place as the stake which was removed to dig the hole.



TREES PLANTED ON THE SQUARE SYSTEM.

SQUARE METHOD.

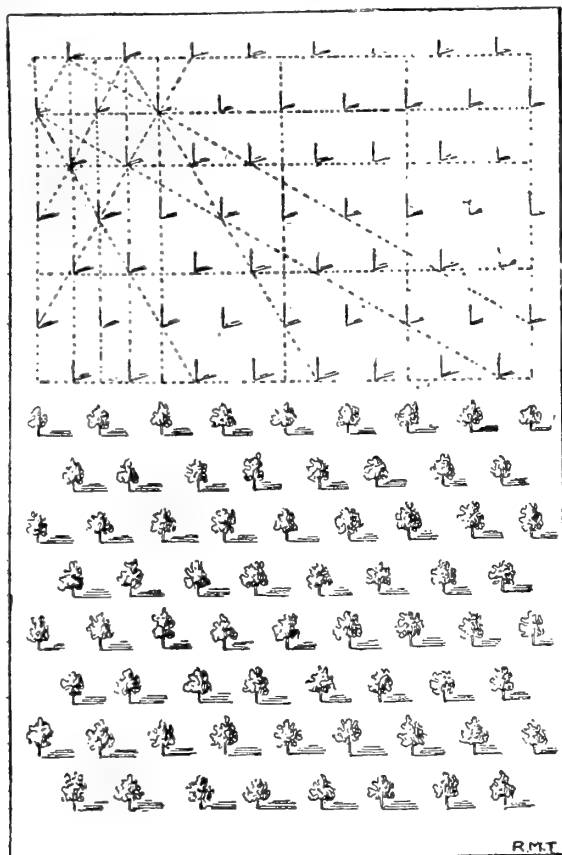
Having the corners fixed, the next step is to lay off the ground. In order to fully understand the matter, we will suppose that the trees are to be planted 24 feet apart. To set stakes for ten trees for each stretch of the wire, it will be necessary to have a wire 240 long with a short two foot link at each end for a three inch iron ring, through which the iron pegs are pushed into the ground after it is drawn taught, to hold it in place. Use a No. 10 gauge galvanized wire and at each 24 foot point have a small piece of wire wrapped around it and soldered into place. Before proceeding with the laying out of the ground, set stakes 24 feet apart along one of the base lines. Having set the stakes along the outside line, start at the same end of the field again and set another line of stakes, parallel with the first line and the length of the chain distant from it. Follow out this method until the entire field is laid out in checks. With the check lines established, it is only necessary now to set stakes at the 24 foot marks on the wire where the trees are to be planted.

EQUILATERAL TRIANGULAR OR HEXAGONAL METHOD.

By this method of planting all the trees are equally distant from each other and the ground is equally divided in all directions. The arrangement admits fifteen per cent. more trees to the acre than the setting in squares and the ground can be worked in three different directions. Objections are urged to it, however, in that it does not admit of thinning trees by removal of alternate rows, as

is sometimes desirable, and that one has to take a zigzag course in driving through the orchard. The accompanying sketch is explanatory of this method of planting.

In planting tracts of any size we do not recommend it. The system should be confined to planting small parcels of land where it is necessary to use every foot of available space.



THE HEXAGONAL OR SEPTUPLE SYSTEM.

BRINGING AN ORCHARD OR VINEYARD INTO BEARING.

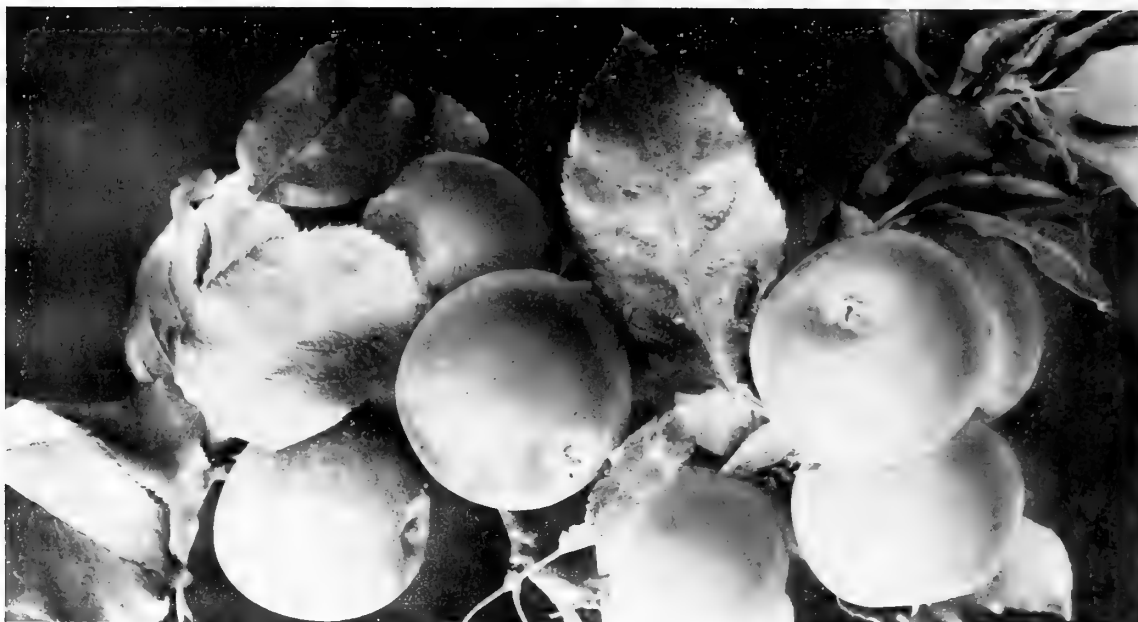
Fruit growing is a business pure and simple and in its successful operation is quite as apt to call forth the best energies of brain and brawn of those who are in the business, as in any other line of commercial activity. Just in the proportion that the orchard receives intensive and intelligent care, will it give corresponding returns for the investment of capital, time and labor. Above all things, do not plant too many varieties if you desire to be a factor among the commercial fruit growers. No greater mistake can be made. As an illustration, in planting ten acres of peaches and having on each acre a different variety: when this orchard comes into bearing there are so many varieties and so limited a quantity of each, that the commercial packer of dried or canned fruits does not feel inclined to pay what the fruit is worth, because there is not enough of any one kind to make it an object for him to handle it.

Growers in new localities are often concerned over the fact that there will be no outlet for the product. The handling and marketing of fruit has assumed such vast proportions that there are always commercial institutions eager enough to enter a new field, and exploit it as soon as the production is large enough to encourage the building of packing houses for the handling of any particular product. Another serious mistake on the part of many

growers, is to endeavor to harvest enormous crops when their trees are only two or three years old. The result of this unwise policy is in many cases to sacrifice the tree to such an extent that just when it should be bringing profitable returns, it was burdened too heavily when young, and in consequence either dies when it should be in its prime, or it takes years of extraordinary care to restore it to its proper vigor. It is just as much a mistake to expect too much from a young tree, as it is to require a child to do a man's work. The care bestowed for the first two or three years in cultivating, pruning and irrigating, where the rainfall is insufficient to carry the trees through the long dry summer months, is the foundation for the upbuilding of a plant, which will redound to the credit of the owner and give him ample returns for his intelligent care and years of hard work.

The tendency toward overproduction in young trees is easily eliminated by pruning. Next to thorough cultivation there is nothing which is more vital to the life of a tree than this one thing. It is difficult to lay down specific rules on this point, but there are basic ones which can generally be observed in the handling of most deciduous trees, with some exceptions, and instructions pertaining to such cases will be dwelt on under proper heads.

After a tree is set never fail to cut it back. This is now the general practice among the most successful orchardists throughout California, and is the result of years of experience. The following winter from three to four branches, properly distributed around the body of the tree, should be allowed to remain to form the head and each one of these branches should have at least one-half of its growth removed, cutting away all laterals from them also. These leaders will eventually form the framework of the tree. Above all things do not shorten in a lateral starting near the terminal point of any of the branches, unless you wish to have a hideous crook in your tree. It is a great mistake to think that unless these small laterals are allowed to remain, the tree will not start. The result of the first year's pruning will cause the trees to make an immense growth and will also induce them to grow stocky. The second winter heavy thinning will have to be followed and the pruning should be done with a view of causing the framework branches to spread out. After thinning, half the growth of the current season should be cut off and again remove all laterals from the framework branches. To the novice this severe cutting seems suicidal, but the results obtained in our own orchards have been so very satisfactory that the soundness of this method can not be questioned. The third year leave from two to three laterals properly distributed on each of the main stems, but they in turn should be cut back at least one half. The third year's cutting need not be so severe, but the thinning and shortening in of the fruit bearing branches should be carefully followed out. It is safe to assume that the trees in the fourth year have reached an age when they should bring ample returns, still pruning should be carefully followed out each season. Failure to prune severely when the trees are young means that there will be a lot of long spindling branches, with practically all the new growth at the tip ends. A heavy crop may be harvested the third year, but the branches will bend down under their heavy load, become sunburned and even break off in some cases, thus sacrificing a tree to the rapacity of a grower, who in his eagerness to harvest a crop has killed the "goose that lays the golden egg." The many advantages of this method of pruning are: (1) It makes a low heading and a more stocky tree, affording an unbrageous head, and thus protecting it from the hot rays of the scorching summer sun; (2) it enhances the carrying capacity of the tree, thus avoiding artificial props when maturing a crop of fruit; (3) it expedites the harvesting of the crop, by rendering it more accessible to the pickers, thus economizing time and expense; (4) it prolongs the life of the tree by reason of conserving its vital forces, and rendering it less liable to damage in the breaking of limbs and taxing its strength by carrying its fruits "close in."



WHITE WINTER PEARMAIN APPLE

FRUIT DEPARTMENT.

THE APPLE.

IN THE temperate zone no variety of fruit is so widely distributed or has been more extensively planted than the apple. The list of varieties is amazing. "Downing's Fruits" alone lists about 3,500 sorts. Following out the rule, which has dominated us for a number of years, we have scaled down our list of varieties, cataloguing only such kinds having distinct characteristics and of value either for home use or from a commercial standpoint. New varieties are never added to our list, unless we are convinced they possess points which make them worthy of cultivation. Varieties are variable as to localities and in planting in sections where apple culture is pursued commercially, the advice as to the best varieties to plant should be sought from experienced growers. Broadly speaking, the hot interior valleys are not suitable for commercial apple culture on a large scale, as the very rapid and early maturing of the fruit does not seem to be conducive to long keeping, as found in tried localities where conditions are favorable for perfecting fruit having long keeping qualities. Nevertheless it is a fact that where moisture is readily maintained in a soil by either irrigation or by sub-irrigation, many varieties to which attention will be more particularly directed later, are of such exceptionally large size, present so fine an appearance and are of such excellent flavor, that more attention should be given to their culture.

The best soil for this fruit is a deep, rich loam which will allow the free extension of the roots and is exempt from stagnant moisture. An extremely light soil should be avoided. Apples do exceedingly well in all the coast counties, as well as in the upper foothills and mountains of the Sierra Nevada. In adjacent States and Territories to the North and East, apple culture is more general, and may be safely followed wherever the soil and climate is favorable. The keeping qualities and the flavor and coloring of our mountain-grown apples at elevations of 5,000 feet or more, are indeed hard to surpass.

It is the consensus of opinion among commercial growers that trees should be planted from 25 to 35

feet apart in orchard form. Trees should be cut back to 18 inches from the top of the ground after being set, except in the higher altitudes, where the snow in settling would cause the branches to break off, where the trees should be headed at not less than three feet from the ground. Apples are very much subject to sun scald and to the attack of the flat headed borer, the first few years after trees are set out. When headed low, protected with tree protectors, permitting of free circulation of air, and by giving the stem a coating of whitewash to which has been added soap and crude carbolic acid, little danger need be apprehended from either of these evils. The wash is made in the following manner: Dissolve one-half gallon of soft soap in one-half gallon of hot water, adding one-fourth pint of crude carbolic acid. When mixing add five gallons of hot water and enough lime to make a mixture the consistency of paint.

All shoots starting out from the body of the trees, which are not required to form the head, should be rubbed off, excepting those starting 12 inches from the surface of the ground, which should be allowed to grow unmolested. The following winter they should be cut back at least one-half and thinned out so as not to leave more than three branches to form the framework, and these should be distributed in such a manner as not to crowd one another as the tree develops. Each one of these branches should be regarded as a subdivision to maintain the wood supply to eventually form a perfectly vase formed tree. The second winter not more than two laterals should be allowed to remain and if there is a tendency to crowd, not more than one on the frame work branches, and their growth should be again shortened in one-half. The tendency as far as possible, should be to prune to an outside bud for the first two winters' pruning. With the head now practically formed, the orchardist must shape the tree in accordance with its development, leaving and shortening in the inside laterals if it shows a tendency to spread out, or if its inclination is to assume too upright a form, cause it to spread by leaving the outside laterals. The cutting back of the trees and judicious thinning prevents the long bare branches so noticeable in

trees, which have not been systematically pruned every winter. The effect of this method of pruning is to cause the structural branches to be larger in proportion to their length, the load of fruit is carried closer to the trunk and even with a very heavy crop of fruit the necessity of propping is eliminated very largely. Props are an expensive item and they also interfere very materially with the harvesting of the crop so that a method of pruning which will dispense with them is worthy of very careful consideration.

Thinning the Fruit. Even with the mode of pruning which has been recommended, the trees in some seasons may overbear, and when this occurs thinning should be resorted to. This work is tedious and slow but it insures marketable fruit throughout on the trees, and also their vitality, causing them to yield uniform annual crops.

Storing Apples. Fall and winter apples for shipment or storing should be picked just when the seeds commence to darken and when the fruit yields to pressure. If allowed to remain on the trees until fully matured, the fruit will not keep. Apples can be kept in the very best of condition for months by storing them in a cool, dark place, where the temperature is even and the air is not too dry. The fruit can be piled three to four feet deep. When large quantities are piled together in this way, the fruit will heat and sweat, and air must be allowed to circulate through it for several days until it dries, when both light and air should be excluded. Never rub apples before storing and avoid packing them in straw and hay as these only impart a bad flavor to the fruit. In many localities in California, apples keep well and sound until spring by simply piling under the trees and covering them with leaves.

Instead of classifying the varieties as summer, fall and winter, we have arranged them in alphabetical order and the time of ripening is indicated for each variety.

Alexander. Large, conical; greenish-yellow, streaked with orange and brilliant bright red in the sun; flesh yellowish-white, of medium quality. Very productive. September.

Arkansas Black. Medium to large, round or slightly conical; yellow where not covered with a beautiful dark maroon, approaching to black; flesh firm, fine-grained, juicy, a long keeper. Tree a vigorous grower and very productive. A valuable market apple. December to April.

Bismarck. Introduced from New Zealand and said to be one of the most promising of recent introductions; a tremendous bearer and one of the very best apples for hot climates. Its remarkable characteristic is its early fruitage. Trees three years old produce perfectly fine and handsome fruits. Fruit is of a beautiful golden-yellow color of the largest size; very highly flavored and a grand dessert apple; also suitable for cooking purposes. Ripens early and is a good keeper. September.

Baldwin. Large, rounded; deep bright red over yellow ground, few russet dots, very productive. A great market variety; a grand apple in the lower mountain ranges. One of the best and most popular winter apples. November to February.

Ben Davis. Medium to large; yellowish, almost entirely overspread with two shades of red; flesh white, tender, moderately juicy, pleasant sub-acid. An old standard variety. November to January.

Duchess of Oldenburg. A beautiful Russian apple; large yellow, streaked with red; tree vigorous and very productive; juicy, firm and crisp, with rich sub-acid flavor; a valuable cooking apple and makes splendid jelly, also highly regarded as a table fruit; excellent in hot dry climates on account of its dense foliage. July to August.

Early Harvest. Medium size; bright straw color; tender and fine with a pleasant sharpness. Good for table and cooking. Early July.

Esopus Spitzenburg. Large, oblong, and smooth, nearly covered with rich lively red and dotted with yellowish russet dots, on shaded side yellowish with broken stripes of red; flesh firm, crisp, juicy, with a delicious aromatic flavor. An old stand-by, whose popularity has never waned. November to March.

Fall Pippin. Very large, yellowish-green; tree vigorous and very productive; flesh white, tender and mellow; one of the best fall apples. One of the finest dessert fruits and an admirable baking apple. September.

Fameuse. "Snow Apple." Medium, and roundish; greenish-yellow, with streaks of deep red on sunny side; derives its name from the snow white color of its flesh; very juicy, one of the finest dessert apples. August to September.

Gano. Originated by N. G. Gano, of Parkville, Mo., no doubt identical with the Black Ben Davis, at least this fact is conceded by many authorities and our observations would lead us to the same conclusion. A true Ben Davis type, except the color, being deep dark red. Tree healthy, vigorous, hardy and a regular and prolific bearer. November to April.

Gloria Mundi. Very large, greenish-yellow, flesh coarse, tender, with pleasant sub-acid flavor; excellent for cooking and drying. October.

Glowing Coal. Of enormous size, and said to be very valuable on account of its striking beauty and superior quality. A vigorous grower; flesh fine grained with sub-acid flavor. A most promising sort. November to February.

Golden Russet. Medium size, round ovate; skin rough, yellow, covered with dull russet; flesh whitish-yellow, sprightly, sub-acid flavor. Thrives well in a warm climate. September to October.

Gravenstein. Large, beautifully dashed with deep red and orange; tender and crisp, with a highly aromatic flavor; tree very vigorous. A grand old sort. August.

Grimes' Golden Pippin. Medium; rich golden yellow, sprinkled with small gray and light dots; flesh yellow, crisp, tender, spicy sub-acid, peculiar aroma; very good to best. Excellent for dessert. December to March.

Hubbardston Nonsuch. Large, roundish oblong and splashed with stripes of bright red, nearly covering a yellowish ground; juicy and tender, with an agreeable acid flavor; very good to best. An excellent variety in the interior valleys of the State and in other localities having a dry warm climate. October.

Jonathan. Medium, conical; light yellow, covered with red stripes; tender and juicy with a sprightly vinous flavor; very hardy and very productive; excellent for table or market; a great favorite in California, specially commended as a market apple; a fine keeper. October to December.

Kentucky Redstreak. Medium, roundish, greenish-yellow shaded with dull purplish-red and sprinkled with large light dots having gray centers; flesh whitish, tender, juicy. November.

King of Tompkins County. Very large, flesh yellowish, rather coarse, juicy, with a rich vinous flavor; particularly adapted to mountain regions. September to October.

Lady Apple. (*Pommi d'Api*). A beautiful little dessert fruit; flat; lively lemon-yellow, with a brilliant deep red cheek; flesh crisp, juicy and pleasant. Highly esteemed at the holidays as a beautiful ornament to Christmas trees. Tree a moderate grower, forms a dense, erect head and bears large crops of fruit in clusters. December.

Lawver. (*Delaware Red Winter*). Large, roundish; bright red, covered with small dots; flesh white, firm, crisp, mild sub-acid; tree vigorous, thrives well in the interior

valleys and in warm dry climates. A fine keeper and very showy. A very excellent late market variety. December to February.

Limber Twig. Medium; yellow, shaded with dull crimson; flesh whitish, tender, juicy, with a brisk sub-acid flavor. January to April.

Maiden's Blush. Medium, well-shaped, yellow, with a very distinct red cheek on the sunny side; flesh white; pleasant sub-acid flavor. It has the beauty of color of the pretty little Lady apple; excellent for the table and for cooking. August and September.

Mammoth Black Twig. (*Paragon*.) Originated in Tennessee. The original tree is now fifty years old and is still vigorous and in bearing; fruit large to very large, roundish, somewhat flattened; dark red, slightly streaked; flesh firm, yellow, sub-acid and juicy and of excellent quality; a fine keeper. Its size, splendid shipping and keeping qualities render it one of the most valuable varieties. Should be widely planted. November to January.

Marshall's Red or Red Bellflower. Originated with J. L. Marshall, near Napa. Fruit very large, same shape as Yellow Bellflower, but of same color as Red June; quality very good; flesh firm, finely grained, slightly more acid than Yellow Bellflower; tree a very heavy bearer. A very popular variety. October to December.

Missouri Pippin. (*Stone's Eureka*.) Very extensively planted in the southern part of the State; large roundish, slightly conical; yellowish, striped and splashed with red; covered with a greyish bloom and sprinkled with large greyish dots; tender, juicy, compact; a good market sort. November to April.

Nickajack. Large, roundish, yellowish shaded and splashed with two shades of red; flesh yellowish, compact, tender and juicy. Tree a vigorous grower and very hardy. December and January.

Northern Spy. Large, roundish, greenish-yellow, covered with light and dark stripes of purplish-red; flesh white, juicy, brisk sub-acid; valuable for market and cooking. The tree is a very rapid, erect grower, a very late bloomer and a heavy bearer. As a resistant to woolly aphid when grown on its own roots, it cannot be surpassed. A fine late keeper and a standard among commercial growers. November to April.

Rambo. Medium, yellowish-white, streaked with pale yellow and red; tender, rich and sub-acid; very productive. A widely cultivated and esteemed old variety. October.

Red Astrachan. Large, deep crimson, with sometimes a little greenish-yellow in the shade; flesh white, moderately juicy, with an agreeable rich acid flavor; excellent for cooking; very productive. A valuable variety in the interior valleys, being a very free grower with large foliage. A standard from a commercial standpoint. July.

Red Beitigheimer. A valuable German variety, very large, roundish inclining to conical; skin pale, cream-colored ground; flesh firm white, with brisk sub-acid flavor. Tree a strong grower and heavy bearer. This fruit is very showy and is worthy of extensive cultivation. September.

Red June. Medium, oblong, deep red; excellent for table; one of the best early apples. June to July.

Rhode Island Greening. Large, greenish-yellow; succeeds on a great variety of soils; flesh yellow, fine-grained, tender, crisp, juicy and aromatic; excellent for cooking and table; adapts itself to a variety of climates. A valuable variety in warm dry climates. October and November.

Rome Beauty. A grand apple and one of the most popular sorts in California. A very late bloomer, therefore never fails to bear a crop; yellow, shaded and striped with red; tender, juicy, good. Its large size, exceptional beauty make it very popular. November to February.

Roxbury Russet. Medium, dull-green, covered with brownish russet when ripe; flesh greenish-white, with a, rich sub-acid flavor; good to very good. October to January.

Smith's Cider. A large, handsome fruit, oblong, somewhat flattened; skin yellow, shaded with red; flesh tender, juicy, crisp with pleasant sub-acid flavor. November to February.

Stayman's Wine Sap. Originated on the grounds of Dr. J. Stayman, Leavenworth, Kansas. Tree vigorous, hardy, spreading. An early bearer and very productive; fruit medium size, round, approaching conic; skin smooth, greenish yellow, splashed and striped with red and purple; flesh yellow, firm, tender, juicy, rich, mild, sub-acid, aromatic, quality best. Is large and more beautiful than Wine Sap. Season January to May.

Stark. Large, roundish, inclining to conical; greenish-yellow, shaded and splashed with dark red; thickly sprinkled with brown dots; flesh yellowish, juicy, mild, sub-acid. A long keeper and profitable market fruit. December to March.

Swaar. Large and regularly formed; pale lemon-yellow, dotted with brown specks; flesh yellowish, fine-grained, tender with rich aromatic flavor; an excellent apple in warm dry climates; a good market sort. December to January.

Twenty-Ounce. Very large, roundish, greenish-yellow, splashed and marbled with red; flesh coarse but with brisk, sprightly sub-acid flavor. Very popular market sort. October.

White Astrachan. A Russian apple; medium, roundish; skin greenish white; flesh white, sprightly, tender; good for market. A beautiful showy apple, having properties making it worthy of extensive cultivation for commercial purposes. July.

White Winter Pearmain. Medium, oblong; pale yellow, thickly sprinkled with minute brown dots; flesh yellowish, tender, crisp, juicy, very pleasant sub-acid flavor; succeeds well in all parts of the State; a standard market sort, widely distributed; a great favorite among commercial growers. November to January.

White Pippin. Large; greenish-white, pale yellow when ripe; flesh white, tender, with a rich sub-acid flavor. December to February.

Wine Sap. Medium; yellow ground streaked with red; tree thrives well on sandy, light soil; flesh yellow, with rich, high flavor; excellent for table, and one of the very best cider fruits. November to February.

Yellow Bellflower. Large, oblong; yellow, sometimes a blush in the sun; flesh firm, crisp, juicy, sub-acid; one of the standard varieties in California and should be extensively planted; tree a good grower and very productive; succeeds well in the interior. October to January.

Yellow Newton Pippin. Large; roundish, more or less flattened of rather irregular shape; skin smooth, golden-yellow; flesh firm, crisp, juicy; one of the standard varieties in California and probably more extensively planted than any other apple. Sells for higher prices in the European markets than any other; a wonderful keeper. January to May.

CRAB APPLES.

A few of these trees will add to the variety of fruits in any orchard or garden. The trees are not only very striking when in bloom, but they bear when quite young and rarely fail to produce heavily each season. They seem to succeed equally well in cold or hot climates, and the value of their fruit for cooking, jelly and cider is recognized to the extent that the demand for them in the market exceeds the supply.

Hyslop. Fruit large, produced in clusters; deep crimson, covered with thick blue bloom. Tree very vigorous.

Its size, color and flavor have combined to make it retain its popularity regardless of the introduction of new varieties. November to January.

Martha. A new Crab raised from the seed of the Duchess of Oldenburg. A most symmetrical grower, bears enormously; color glossy yellow shaded with bright red. Fair to be eaten out of the hand and for culinary purposes one of the very best. September to October.

Red Siberian. Fruit small, about an inch in diameter; yellow with scarlet cheek; tree erect and vigorous; bears young and abundantly. Excellent for jelly. September.

Transcendent. Fruit very large; tree immensely productive; fruit juicy and crisp; skin yellow striped with red, the best of its class for cider. September.

Yellow Siberian. Very similar to the Red Siberian, except the color, which is a beautiful golden yellow.

THE PEAR.

The pear is a fruit cultivated throughout California and the Pacific States generally, extending into Mexico. It does well in all soils, but succeeds best on a heavy loam. Of the whole range of commercial fruits it seems to thrive better in alkali soils than any other and is being largely planted in vineyards and orchards, where the vines and trees have been killed. The trees are usually planted 20 to 25 feet apart on the square. The practice of cultivation is much the same as with the stone fruits. Pruning is usually to the vase form of tree. The fruit should be thinned out on heavily loaded trees or else it is liable to run to small and unmerchantable sizes. The fruit of summer and autumn sorts should be gathered at the first indication of ripeness, the first sign being the tendency of the stem to part from the spur when the pear is gently raised up. Late pears should hang as long as possible a slight frost will not injure them as much as premature gathering. They should then be placed in a dark cool place, where they will ripen, acquiring a delicious aroma, fine flavor, and a melting characteristic pleasing to the palate when eaten. The demand for this fruit both in the green and dried state is increasing yearly, making it a most profitable product.

The trees should be cut back to 18 inches from the top of the ground after planting. The following winter, all but three or four branches should be cut out, and at least one-half of their tops removed. The second winter the tree should be pruned severely again, removing not less than one-half of the current season's growth and aiming to allow from one to two shoots on each of the branches from the year before. Prune the tree so as to cause it to spread and prevent overcrowding of the main branches when the tree reaches maturity. The third season cut back one-third of the new growth and thin out such branches as are showing an inclination to crowd the center of the tree too much. The form of the tree will be a sufficient guide as to what plan to follow to develop a shapely tree in future years. Prune every year. No tree responds so readily to the pruning shear as the pear; it assumes the characteristic vase form as if shaped by a magic hand. The tendency to allow the trees to grow unpruned, and as a result to send up a lot of straight shoots so closely crowded that they look like bean poles, is a common and reprehensible practice among many growers, and in consequence of this the fruit is all in the tops of the trees. If they do happen to have a heavy crop, unless very carefully propped, they break off. Pruning the tree regularly each year, causes it to not only become stocky, but also develops a bearing surface, which starts where the branches diverge from the main stem, to the very top of the tree. The tree in addition to this, becomes self supporting and it will carry a crop of fruit through the season with hardly a prop to support the heavily laden branches.

Following out the plan adopted with apples, the varieties are arranged in alphabetical order and in each case time of ripening is designated.

GENERAL COLLECTION.

Bartlett. Large; skin very thin, clear lemon-yellow with soft blush on the sunny side; flesh white, buttery, very juicy and highly flavored; the best summer pear in existence; thrives in all parts of California. The most popular of pears and more highly esteemed for canning, shipping and drying than other other. August.

Beurre Bosc. A large fine pear with long neck; cinnamon-russet, handsome; half melting, juicy, slightly perfumed and delicious; tree fine grower and productive; one of the most valuable of our autumn pears. September.

Beurre Clairgeau. Large; yellow, shaded with orange and crimson, covered with russet dots; flesh yellowish, buttery, juicy and granular; one of the best varieties for transportation. September.

Beurre d'Anjou. Large; russet-yellow shaded with crimson; melting, juicy, rich and delicious; valuable for market and table. September.

Beurre Giffard. Medium, tapering to the stem; greenish-yellow, shaded red on sunny side; melting and juicy; a fine early pear. July.

Beurre Hardy. Large; greenish, covered with light russet and shaded with brownish-red; flesh buttery, with a rich vinous brisk flavor; good. September.

B. S. Fox. A seedling raised by the late B. S. Fox; large; somewhat the shape of Clairgeau; skin greenish-yellow; smooth, nearly covered with golden russet; flesh buttery, juicy, sub-acid flavor; a valuable addition to the list of our autumnal pears, and highly recommended on account of its excellent shipping qualities. September.

Bloodgood. Medium; yellow sprinkled with dots; rich, sugary, highly aromatic flavor. August.

Clapp's Favorite. Large; pale lemon-yellow, marbled with crimson on sunny side and thickly sprinkled with brown dots; flesh finely-grained and melting; with a rich vinous flavor. July.

Col. Wilder. Another of Fox's seedlings. Large, pyriform, oblong inclining to oval, yellow, profusely dotted and marbled with russet; flesh melting, juicy sweet, with a peculiar flavor. Tree a vigorous grower and an excellent keeper. November to March.

Dana's Hovey. (*Winter Seckel*). Fruit medium, regular in form; skin greenish-yellow netted and patched with russet, and sprinkled with many brown dots; flesh yellowish, juicy, melting, with a sugary, rich aromatic flavor. Tree vigorous and a regular and enormous bearer. November.

Doyenne d'Alencon. Medium; skin rough yellow, shaded with dull crimson; flesh granular, juicy, sugary, and highly perfumed. November.

Doyenne d'Ete. Fruit small, roundish, slightly pyriform; skin smooth, fine yellow, often shaded with bright red and covered with russet dots. One of the earliest. July.

Doyenne du Comice. A French pear of recent introduction and of much promise; fruit large; skin greenish yellow, shaded with crimson in sun; flesh buttery, rich and slightly aromatic. October.

Duchesse d'Angouleme. Very large; dull greenish-yellow, spotted with russet; flesh white, buttery, but not of first quality in flavor. September.

Easter Beurre. Large, roundish, often sprinkled with many dots and patches; flesh white, fine-grained, juicy, sweet, rich flavor; a most desirable winter pear and an excellent shipper; tree a rapid grower and a very abundant bearer. October to January.

Flemish Beauty. Large; pale yellow, marbled with light russet; flesh yellowish-white, not fine-grained but very juicy and melting; good bearer and very hardy. September and October.

✓ **Forelle or Trout Pear.** A beautiful German pear, deriving its name from its finely speckled appearance; fruit oblong, inclining to pyriform; lemon-yellow, washed with deep rich red on the sunny side, where it is marked with large crimson specks; flesh white, buttery, melting, slightly vinous. September and October.

Glou Morceau. Large; skin pale greenish-yellow, marked with small green dots; flesh fine-grained, buttery, very melting, with a sugary flavor. Not only a valuable table, but a fine keeper, standing shipping well. December.

Howell. Large, waxen, yellow, sprinkled with minute russet dots; flesh whitish, juicy, brisk, vinous; vigorous grower and an immensely prolific bearer. August.

Kieffer's Hybrid. Large; skin rich golden-yellow, sprinkled thickly with small dots and often tinted with red on one side; flesh slightly coarse, juicy, of rather inferior flavor; tree very vigorous, an early bearer and very prolific and more widely distributed throughout the United States than any other pear. October.

Lawson or Comet. Large; brilliant crimson color on yellow ground; flesh crisp, juicy, but of rather inferior flavor; a firm and good shipper; the most attractive of all early pears for market, on account of its beautiful exterior. Its large size and earliness make it one of our most valuable shipping pears. June.

Le Conte. Large, bell-shaped; skin smooth and of a rich creamy-yellow color; a rapid grower, a prolific bearer; foliage is rich and luxuriant; it is valuable for its shipping qualities and is excellent for cooking. Flavor second quality. July.

Madeleine. Medium; pale yellow, dotted with brown dots; flesh melting and juicy; the first early pear. June and July.

P. Barry. A most valuable winter pear, originated by the late B. S. Fox, of San Jose; large to very large; ovate pyriform; skin yellow, nearly covered with russet dots and blotches; flesh juicy, fine-grained, flavor sprightly, rich, excellent. The tree is a vigorous grower and heavy bearer, and in habit is very much like the Winter Nelis; an excellent keeper, it is worthy of extensive cultivation. December to March.

Seckel. This small but most delicious pear originated on the farm of Mr. Seckel, near Philadelphia. Without question the richest and most highly flavored variety known. Its highly concentrated, spicy, honeyed flavor is not equalled by any other variety. Skin brownish-green with a lively russet-brown cheek; flesh whitish, buttery, juicy and melting. August to September.

Winter Bartlett. This fine pear originated in Eugene, Oregon. Fruit large, closely resembling the famous Bartlett in shape and appearance, but ripening four months later; skin yellow, slight blush on side exposed to the sun; perfectly smooth, sprinkled with large russet brown dots; flesh not quite as fine-grained as the Bartlett, but tender, juicy and melting and with a flavor almost identical to the Bartlett. Its fine flavor, unexcelled keeping qualities, combined with its lateness, places it in the front rank as one of the finest of winter pears; worthy of extensive cultivation. In every way a grand fruit. November.

Winter Nelis. Medium; skin yellowish-green, dotted with gray russet; flesh yellowish-white, fine-grained and abounding with juice of a rich, saccharine, aromatic flavor; thrives best in warm localities and is especially adapted to a warm dry climate; a regular bearer. An excellent shipper and good keeper. December.

DWARF.

The following varieties are worked on quince root as dwarfs and are to be recommended for gardens or where space is too limited to permit the growing of standard trees. For extremely wet locations, the quince root is particularly recommended. Bartlett, Beurre Hardy, Doyenne du Comice, Duchesse d'Angouleme, Easter Beurre, Glou Morceau, P. Barry, Sheldon, Winter Bartlett, Winter Nelis.

THE CHERRY.

The popularity of this, the initial stone fruit of the season, is unquestioned. The firmness of the leading shipping varieties permits of their being packed when almost ripe for eastern shipment, and this accounts for the enthusiasm with which our cherries are received in the eastern markets. California has every reason to be justly proud of its large, highly colored and luscious cherries. The tree thrives best in the coast counties, but also does well in some sections of the interior where the soil is of a deep rich alluvial nature, retentive of moisture, and also well drained. The cherries of Washington and Oregon are also famous, although they ripen somewhat later than in California. Plant the trees 25 to 30 feet apart and, on exceptionally good soil, even further than this distance is advisable. Low heading is important as the tree is subject to sunburn, the bark being very sensitive. The trees should therefore be headed back to 18 inches. Three branches should be allowed to grow to form the head of the tree and these should be distributed in such a manner as to prevent forks, as the tree has a tendency to split as it grows older. The first winter, these branches should be cut back one-half and the following season not more than one to two branches should be allowed to grow from those left the first year. The third season the new growth should be shortened in about one third, and some of the laterals appearing near the point of divergence from the main stems should not be cut off but merely shortened in, for the shade they furnish is one of the essential features in the development of the young trees. This same method of pruning should be followed until the fifth year. In after years the cutting should be confined to the removal of branches which are interfering and overcrowding.

The soil in which our trees are grown is particularly well adapted to the development of a perfect root system. Our trees are principally worked on the Mazzard root, as it is adapted to the soils of the Pacific coast. The tendency of the Mahaleb root is to dwarf the trees, although the very opposite effect is apparent in the one year buds in nursery rows.

The cherries are classified under two heads, the Hearts or Bigarreux, which are the sweet cherries, the trees being strong, vigorous growers; the Dukes or Morellos are the sour cherries. The latter trees grow more slowly, the branches are more slender and of a darker hue, the leaves are thicker, more erect and of a deeper green.

GENERAL COLLECTION.

In the following list the Heart or Bigarreux Cherries are designated by the letter "H" and the Dukes or Morellos by the letter "D". The time of ripening is based on climatic conditions in counties adjoining San Francisco Bay.

Belle d'Orleans. H. Above medium size, roundish heart-shaped; whitish yellow, partially covered with pale red; sweet and excellent. May.

Belle Magnifique. D. Large, bright red; flesh juicy, tender, acid, excellent for cooking. June.

Bing. H. This deservedly popular cherry originated by Seth Lewelling, of Milwaukee, Oregon, is one of the grand-



THE BING.

est black cherries in existence today. Its large size, firmness and delicious flavor have

caused it to be in active demand by shippers and canners alike. The tree is a remarkably thrifty upright-grower, and a prolific bearer. Middle of June.

Black Eagle. H. An excellent variety; skin deep purple; flesh tender, rich, juicy and highly flavored. Tree a moderate grower and productive. June.

Black Tartarian. H. An old standard, which has maintained its prestige as one of the leading black cherries. Tree a remarkably vigorous, erect and beautiful grower and an immense bearer. Fruit deep purplish black; flesh rich, juicy, delicious. Late May.

California Advance. H. A seedling of the Early Purple Guigne, earlier than its parent; a great bearer. Middle May.

Centennial. H. A seedling of Napoleon Bigarreau, larger than its parent and beautifully marbled and splashed with crimson on a yellow ground; flesh firm, sweet; a good shipper on account of its remarkable keeping qualities. Early June.

Chapman. H. A seedling of Black Tartarian; said to be larger, finer and earlier; ripens immediately after Early Purple Guigne. April and May.

Early Purple Guigne. H. Among the best of the early cherries; medium size, heart-shaped, purple; tender, juicy, sweet; very hardy and productive. April and May.

Early Richmond. D. Medium; dark red; juicy, sprightly acid flavor; one of the best acid cherries, and unsurpassed for cooking purposes; very productive. Middle of May.

Elton. H. Large, pointed, pale yellow, nearly covered with bright red; juicy, fine flavor; one of the richest of cherries; a vigorous grower. Last of May.

English Morello. D. An old and popular variety. Large, deep red; flesh juicy, tender, acid, rich; tree dwarf and slender. July.

Governor Wood. H. A prolific and constant bearer. Resembles Royal Ann, but is of a deeper yellow color and shaded more heavily with red. A very popular canning cherry and one of the most highly prized for the table. Early June.

✓ **Great Bigarreau.** H. (*Monstreuse de Mazel*). A French cherry, very large; dark red to black; flesh firm and juicy; tree a strong grower and very productive. Early June.

Knight's Early Black. H. Large, black, juicy, rich and excellent. May.

Lambert. H. This very promising cherry, of the largest size and bright rich color, is deserving of all that has been said of it by the introducer. Its surface is smooth, glossy and is covered with minute russet dots; flesh reddish with whitish veins, very firm and of unsurpassed quality. Stands well in the lead as a shipping variety. Middle of June.

Lewelling. H. (*Black Republican*. *Black Oregon*). Seedling raised by Seth Lewelling of Oregon; large size, black, sweet, with purplish flesh; late and a good shipper. Tree a moderate grower; an early and profuse bearer. July.

May Duke. H. Large; rich dark red; flesh tender, juicy and sub-acid; an excellent variety, and one of the earliest of its class. Last week in May.

Napoleon Bigarreau. H. (*Royal Ann*). A magnificent cherry of the largest size, pale yellow, becoming amber in the shade, richly dotted and spotted with deep red, and with a bright red cheek; flesh very firm, juicy and sweet; tree a rapid grower and immense bearer. The most popular all around cherry for canning, preserving and shipping. Late June.

Ostheimer Weichsel. D. Fruit of largest size; roundish oblate; skin very dark when mature; flesh liver color, tender, juicy, almost sweet, sub-acid. Very fine. Late June.

Reine Hortense. D. Very large; beautiful, glossy red; a good bearer; excellent for canning, but too soft for shipment. Generally considered the mildest of its class. Early June.

Rockport Bigarreau. H. Small; pale, amber in the shade; light red in the sun; good bearer; highly esteemed for cooking and shipping. First week in June.

Schmidt's Bigarreau. H. A black cherry of the largest size. Fruit of a deep mahogany color; flesh tender, very juicy, with a fine rich flavor; grows in clusters. An excellent shipper, being firm and very attractive. Stone small. First of June.

Windsor. H. Originated at Windsor, Canada, and introduced by Ellwanger & Barry. Fruit large, liver-colored, flesh firm, and of fine quality. Tree very hardy and prolific. One of the best late varieties for market and family use. Last of June.

Yellow Spanish. H. Large; pale yellow; one of the best, most beautiful and popular of all light colored cherries. Tree erect, vigorous and productive. End of May.

THE PLUM.

Plums and prunes are so closely allied that remarks pertaining to one fruit are equally applicable to the other. Practically speaking the prune is characterized by its sweet, firm flesh and has the property of drying and curing without the seed being removed, making an excellent fruit, recognized as having great value in the commercial world.

The plum in its geographical distribution on this Coast, and particularly in California, covers a wide range of soils and climates, being thrifty along the Coast regions, in the Coast and interior valleys, and well up in the foothills. Indeed, so wide is its range that it is safe to say that every county in the State boasts of its plum orchards, excepting perhaps the city and county of San Francisco. This adaptability is undoubtedly due largely to the various stocks on which the different sorts are budded or grafted. Twenty to twenty-five feet apart is a standard distance to plant the trees.

Being a sprawling grower, the tree should be pruned quite severely when young and headed back to 18 inches from the surface of the ground. The tree, like the cherry, is subject to sun scald, and this is readily overcome by having the branches start down low to give ample shade to the body of the tree. The first four seasons following planting, practically the same method of pruning as directed for other fruits should be adopted. After the fourth season, the pruning should be confined to removing interfering branches, dispensing with the shortening in of the laterals, for experienced growers have learned that this only promotes the growth of an immense amount of young wood; which does not produce fruit. When it is noticed that the trees no longer present a healthy appearance and fail to produce profitable crops, some cutting back will have to be resorted to in order to rehabilitate the tree to its former vigor.

Our trees are worked on Myrobolan and Peach roots, to suit the varying soil conditions met with, not only in California, but in other countries as well. The Peach root will thrive on loamy soils, which either through actual rainfall during the winter months or from irrigation are retentive of moisture. The Myrobolan root seems to possess a greater affinity in the matter of forming a perfect union and exercising an influence on the longevity of the tree. The trees do not grow quite as rapidly, but the fruitage is not affected in any way by this root. We do not recommend it for extremely sandy soils but for any ordinary soil or for localities subject to overflow and to standing water, this root is invaluable.

The Oriental varieties are coming more into favor. The trees grow rapidly, are heavy and regular bearers, and adapt themselves to a wide range of territory. The fruit is very showy and highly flavored and its shipping qualities are unexcelled.

NEW VARIETIES.

Apple. Originated by Burbank, named for its close resemblance, form, color and rare keeping qualities; flesh firm, deep red with marbling and streaks of pink. A valuable acquisition to the list of Japanese plums; ripens after Burbank; similar to the Satsuma to all outward appearances, although it is very much larger and firmer, being also its superior in flavor. Late July.

Bartlett. One of the most striking of Burbank's introductions in the plum line and well named after the famous Bartlett pear, for it resembles it very closely, having an erect upright habit with glossy green leaves. Fruit oval, yellow, turning to deep crimson when fully ripe; flesh light salmon colored, firm and juicy with a flavor partaking of the banana and the Bartlett pear. Last of June.

Chalco. A cross between Simoni and Burbank, resembles the former variety very closely but said by the originator, Luther Burbank, to be by far superior to it. A tremendous grower and very prolific. A superior shipping plum, as it ripens and keeps well when picked green. Will eventually supplant the Simoni, thriving and bearing where that variety is a failure. Early August.

Climax. This is well named the "King of Plums," its extreme earliness, immense size, high color, delicious flavor and fragrance, places it well in the lead among early

shipping plums. Fruit heart-shaped; color deep, dark red; flesh yellow. Tree vigorous and remarkably productive. Middle of June.

Sultan. Said by the originator, Luther Burbank, to be one of the most attractive of plums; its huge size, deep purplish crimson color renders it a valuable market variety. The flesh is very firm, fragrant, sweet, dark crimson, clouded and shaded with pink, salmon and light yellow. Tree is a very rapid grower with wood and leaves very much like a Royal Ann Cherry. Late July.

GENERAL COLLECTION.

Bavay's Green Gage. (*Reine Claude de Bavay*). An excellent foreign variety; fruit large, greenish-yellow streaked with green; flesh yellow, tender, juicy, melting, rich. A first-class dessert and canning plum; larger than the Green Gage and somewhat later. August.

Burbank. Introduced by Luther Burbank. Fruit is large, nearly globular, clear cherry-red, with lilac bloom; flesh deep yellow, very sweet, with a peculiar and most agreeable flavor; tree very vigorous, often commencing to bear when only two years old. Late June.

Bradshaw. Large, reddish-purple, juicy and pleasant; adheres partially to the stone, but becomes nearly free when fully ripe; tree very vigorous; as it blooms late it seldom fails to bear a crop. Late July.

Cherry Plum. Small; lively red, sometimes yellow, light bloom; flesh greenish, soft, with a pleasant sub-acid flavor. June and July.

Clyman. Originated in Napa Valley; mottled, reddish-purple, with beautiful blue bloom; free stone; flesh firm and sweet; two weeks earlier than the Peach Plum, which it very much resembles, only it is not quite as large. Very valuable for shipping. Tree very prolific and a strong grower. Late June.

Coe's Golden Drop. Very large; light yellow; flesh sweet and delicious; adheres partially to the stone; tree very vigorous; a standard late variety for canning. Late September.

Columbia. Largest size, nearly globular; brownish purple, dotted with fawn-colored specks; rich, sugary and excellent; separates freely from the stone, which is very small and compressed. August.

Duane's Purple. Very large; reddish-purple; flesh yellow, juicy and sweet; adheres to the stone. Late July.

Early Golden Drop. Small, bright yellow; sugary; Middle of June.

General Hand. Very large, oval; deep yellow, moderately juicy, sweet and good; parts freely from the stone. Late July.

Giant. Introduced by Luther Burbank; raised from the seed of the Petite d'Agen, pollinated with the Hungarian prune. Tree is a handsome, strong, vigorous grower; leaves very large, so the fruit is well protected. Fruit large to very large; flesh yellow, flavor good; free-stone. Late August.

Grand Duke. A valuable addition to late plums; skin dark, almost blackish-purple; flesh greenish-yellow, adhering closely to the stone; has a sweet and rich flavor when fully ripe; tree a regular and prolific cropper. Late August.

Green Gage. Medium, round, skin tender, yellowish green; one of the richest of plums, separates freely from the stone; tree a good grower. Middle of July.

Ickworth Imperatrice. Above medium size, obovate; skin deep purple traced and embroidered with streaks of golden-fawn color; flesh greenish-yellow, sweet, juicy, and rich; adheres slightly to the stone. A valuable late variety; its firmness and fine keeping quality render it worthy of more general cultivation. September.

Imperial Gage. Above medium size; oval, pale green, tinted with yellow; very juicy and rich; fine for canning. Late July.

Jefferson. Large, oval, greenish-yellow, becoming rich golden



THE JEFFERSON.

yellow, dotted and flushed with red; one of the best for canning; one of the most desirable and beautiful of all dessert plums; parts freely from the stone; tree a good grower and very productive. July to September.

Kelsey Japan. Very large heart-shaped; color green, changing to rich yellow, nearly overspread with bright red when fully ripe and covered with bloom; flesh yellow, very firm and adheres slightly to the stone which is very small; tree an immense bearer and very ornamental. A very profitable market fruit and generally very highly regarded for domestic use. July to September.

Peach. Very large, shaped like a peach; skin brownish-red, flesh pale yellow, slightly coarse grained, but juicy; separates freely from the stone; very valuable for shipping, always commanding a high price. Early July.

Red Egg. (*Red Magnum Bonum*). Large; oval, pale red, changing to deep red in the sun; flesh coarse, sub-acid flavor. August to September.

Satsuma. (*Blood Plum*). Large, globular, skin of a lilac shade; flesh dark red, solid color from skin to pit, firm, rather juicy, good flavor; pit very small. There is a growing demand for this fruit with an insufficient supply thus far to meet it. July to September.

Shropshire Damson. An old English variety introduced into this country years ago and the most extensively cultivated of any of the Damson plums. Tree a good grower and enormously productive. Fruit oval, medium to small; dark blue with blue bloom; very firm; flesh greenish, juicy and sprightly when fully ripe. Very much sought after for cooking and preserves. October.

Simon Plum. (*Prunus Simoni*, *Apricot Plum*). Said to be a native of Northern China; tree resembles the peach, with the exception that the leaves are of a lighter shade; a very vigorous upright grower; fruit large, of a cinnabar color, flattened at both ends; flesh yellow, firm, rich, sweet with a marked pineapple and faint banana flavor; pit very small. One of the best of the foreign plums, its high color, delicious flavor and earliness combine to make it one of the best plums for eastern shipment. Early July.

Washington. A fine, large plum; skin dull yellow, with a pale crimson blush; flesh yellow, firm, very sweet and luscious; separates freely from the stone. As a canning plum it has few equals. Early August.

Wickson. Originated with Mr. Luther Burbank, and considered by him to be among the best of the Japan plums. The tree is a strong, vigorous upright grower, even more so than the Simon Plum, which it very much resembles in habit, except that the leaves are much broader. It is a cross with Satsuma on Kelsey bloom. Formed like the Kelsey, but more symmetrical; in ripening the color changes from a deep cherry red to a rich claret; flesh amber, very juicy; pit is small; the flavor is striking and agreeable; a valuable shipping plum. Early August.

Yellow Egg. Very large, oval; skin thick of a deep golden color covered with a white bloom; juicy, but rather acid; an excellent variety for cooking, canning and market; very showy and when fully ripe a most attractive dessert plum. July and August.

THE PRUNE.

Prunes, as all experienced horticulturists know, are the dried product of certain varieties of plums, though in the nursery trade the word has a significance of much wider application, meaning the commercial growing of these varieties as an independent fruit. The same general remarks as to soils and climates given under the heading of Plums, apply to prune culture. The production of this fruit is one of the chief industries of this state; our prunes are sweeter than the imported and are in every respect equal to them, and today the United States is exporting prunes, particularly the larger sizes, to Europe. The river bottom lands in the San Joaquin Valley are admirably adapted to their successful production.

GENERAL COLLECTION.

Fellenberg. (*Large German Prune*, *Swiss*, *Italian Prune*). Large, oval, tapering at both ends; dark purple; flesh greenish-yellow, separates freely from the stone. Very extensively used in Oregon and Washington for drying, but in California it is valued for shipping green only. August.

French. (*Petite Prune d'Agen*). Medium sized, egg shaped; violet purple; sweet, rich and sugary; very productive. This is the standard variety for drying, and has been more extensively planted than any other. August and September.

German. (*Quetsche*). Long, oval; skin purple covered with blue bloom; flesh green, sweet; separates freely from the stone; a good market and table fruit, very rarely dried. August and September.

Hungarian. (*Pond's Seedling*, *Grosse Prune d'Agen*). Very large, ovate; skin thick, reddish violet, with numerous brown dots; juicy and sweet; tree a strong grower and very prolific bearer; its large size, showy appearance, renders it a profitable variety for shipment for home and distant markets. Never dried without being pitted, followed by exposure before drying to the fumes of sulphur; this gives the dried product a very attractive red color and the fruit in this shape is sold as the "Ruby Plum." August 15 to September.

Imperial Epineuse. (*Imperial*). The tree is a strong, thrifty, sturdy grower, and in habit very closely resembles the French Prune. Readily distinguished by its blunt thorns. The fruit is very large, and of uniform size on the tree, of a violet-purple color, with dark blue bloom; flesh greenish-yellow, and exceedingly sweet; pit small. It ripens earlier than the French Prune, and when dry is quite dark, and is in every respect fully equal if not superior to the French Prune in flavor and sweetness, and in size it is far ahead of it. August and September.

Robe de Sargent. Fruit medium to large, oval; skin deep purple approaching to black and covered with a thick blue bloom; flesh greenish-yellow, sweet and well flavored, sugary rich and delicious, adhering slightly to the stone. This variety makes a larger, darker colored dried prune than the Prune d'Agen and is valuable both for drying

and preserving. The tree bears a very close resemblance to the French Prune, its distinctive features are that the prunes are very much larger and the leaves are of a glossy green hue. August and September.

Silver Prune. Said to be a seedling of Coe's Golden Drop, but undoubtedly one and the same. Fruit of the largest size, skin pale yellow. Profitable as a bleached prune and for canning. September.

Sugar. This creation of Burbank's has attracted considerable attention. The fruit runs very even in size, but must be thinned. It ripens fully a month earlier than the French Prune and this fact alone makes it a valuable acquisition, but add to this its high percentage of sugar in the fresh fruit, averaging 23-92 per cent, as compared with 18-53 per cent in the French Prune. The tree is a vigorous, strong grower, an enormous and regular cropper and having unusually large foliage, it ought to prove very valuable in the interior valleys. Skin very tender, dark purple when mature, covered with a thick white bloom. Cures easily; flesh is yellow, tender and rich. It has been found to be a very valuable variety for shipping green. Early August.

Tragedy. Originated in Sacramento county; medium; resembles Duane's Purple, but is more elongated; skin dark purple; flesh yellowish-green, very rich and sweet; parts readily from the pit; tree a rapid grower and very productive. Valuable on account of its earliness and as a shipping fruit. Early July.

THE APRICOT.

A fruit intermediate between the peach and the plum, and particularly adapted to California conditions. As a commercial proposition, this State has practically a monopoly in apricot culture, as no other section of the Union produces it in commercial quantities at so small an expense and at so little risk of failure in crops. It finds its best development in Coast counties and in the interior valleys, though on low land it is at times apt to suffer severely from the cold. Owing to the success with which it can be budded to different stocks, it is afforded a wide range in the matter of soil, moisture and climate, and in the production of our trees, we have given particular attention to the different root stocks calculated to overcome any local drawbacks in this regard. Being a rampant grower, the pruning knife and saw must be constantly, and often severely applied.

The remarks pertaining to pruning the peach, are applicable to the handling of the apricot. To maintain the tree to its fullest vigor, pruning must be practiced every season. It is indeed a delicious fruit; ships well and commands a good price in the eastern market. For drying and canning there is nothing superior to it. The period of ripening mentioned is for the interior valleys, in the coast counties it is fully 30 days or more later.

NEW VARIETIES.

Smyrna. This new variety was introduced by our Mr. Geo. C. Roeding in 1901. It was found growing in the garden of Dr. Rufus W. Lane, American Consul in Smyrna. The fruit is large to very large, resembling in shape the Hemskirke; flesh is bright orange yellow, juicy and sweet, parts freely from the stone, the remarkable fact about it is, that the kernel is sweet, having all the properties of an almond, the Prussic acid taste being absent entirely. Very highly valued in Smyrna and it will, no doubt, be a valuable addition to our list of apricots here, with everything in its favor to be successfully grown, due to the similarity of our climate to that of Smyrna.

GENERAL COLLECTION.

Black Apricot. This remarkable apricot so strongly resembles a dark round plum, that at a little distance it might be mistaken for one. The tree is an upright grower,

with small oval foliage. Fruit medium, dull reddish-purple, and covered with a slight down; flesh varying from pale red to yellow; adheres to stone; juicy with a pleasant astringent flavor. A striking novelty. June 15.

Blenheim. (*Shipley*). An excellent variety and in great demand for canning and drying. The trees are early and regular bearers and have an abundance of foliage thoroughly protecting the fruit. Fruit above medium, oval; orange color, with deep yellow, juicy and rich flesh. Middle of June.



THE HEMSKIRKE.

Hemskirke. (*Alameda Hemskirke*). Of English origin. It strongly resembles the Moorpark, but ripens earlier and is a more regular and prolific bearer. Fruit large, roundish, but considerably compressed or flattened on both sides. Flesh bright orange, tender with a rich plum-like flavor; ripens very uniformly. A great favorite. Late June.

Large Early Montgamet. A large apricot of French origin; resembles the French apricot in shape and appearance. The tree is a striking grower and it is easily distinguished from all other varieties by its long slender branches which have a weeping tendency; the fruit is large, compressed, and of a deep golden yellow color. Early June.

Moorpark. Very large; yellowish-green, brownish-red on the sunny side, marked with numerous dark specks and dots; flesh bright orange, parts freely from the stone; which is peculiarly perforated along the back where a pin may be pushed through from one end to the other. Fine for canning and drying. The most popular and unquestionably the finest apricot grown, but not planted as extensively as it should be on account of being a shy bearer. Late June.

Newcastle Early. Originated by C. M. Silva & Son, of Newcastle, California. Medium, round, and two weeks earlier than Royal. A good shipper and very valuable on account of its earliness. First of June.



THE NEW SIMS CLING PEACH. NATURAL SIZE.

Pringle. Of California origin; small, clingstone; worthy of cultivation only for its earliness; should not be extensively planted. Middle of May.

Royal. French origin; fruit medium, oval, slightly compressed; dull yellow, with red flesh on side exposed to the sun; flesh pale orange, with rich, vinous flavor; very desirable in all parts of the State, and more extensively planted than any other variety; excellent for canning and drying. Early June.

Routier's Peach. (*Peach, Bergetti's French*). Fruit very large, rather flattened and compressed on its sides, with a well marked suture. Skin orange-yellow, flesh of a fine saffron yellow color, juicy, rich and highly flavored. This apricot is a valuable acquisition, and we take pleasure in recommending it as one of the very best apricots in existence. When dried it is of a deep golden-yellow color. Its large size, fine color, render it very attractive in the dried state. Middle of June.

St. Ambrose. A large, early apricot, earlier than the Moorpark; deep yellow color; flesh sugary and juicy; good for drying or canning. Middle of June.

Spark's Mammoth. A new apricot originated in Ventura County by W. W. Sparks. The fruit is of an extra large size, with skin of a pale lemon-yellow color. Flesh clear yellow, very tender, juicy and sweet. Last of June.

Tilton. Originated by Mr. Tilton of Lemoore, Kings County, Cal. The original tree has never failed to bear an abundant crop. The young orchards now coming into bearing in many sections are giving evidence of remarkable fruitfulness. In general appearance the fruit resembles the Routier Peach, averaging fully as large, but is much more deeply colored than that variety. It ripens very uniformly and is exceedingly firm and will hang on the tree even when dead ripe without deteriorating. The flesh is of an orange-yellow color, with a very highly pronounced apricot flavor. It not only dries well, but is valuable for canning and shipping. Already very much in demand by canners. Middle of June.

THE PEACH.

The Peach, like the prune and apricot, is indeed a fruit of commercial importance to economic horticulture, and finds wide distribution not only in California, but throughout the length and breadth of the Pacific slope. For size, flavor, color and shipping qualities the peaches grown in this State have a national reputation. The tree prefers a light, deep, sandy loam, preferably inclined to be dry rather than too moist, but well drained. It should be not less than three or four feet deep, the more depth the better.

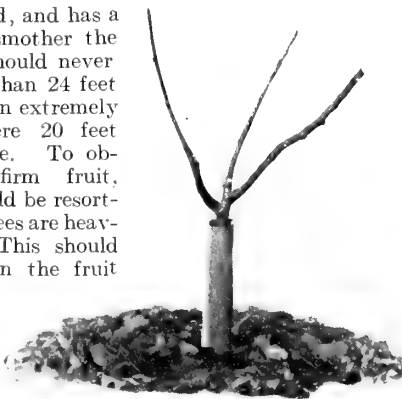
The general cultural directions for the handling of deciduous fruit trees in the introductory chapters should be closely followed in the case of the peach tree. Nothing will bring a peach tree to a premature end, quicker than not to prune. The trees as they stand in nursery rows have the limbs removed to a point about 12 inches from the ground. Instead of removing all these limbs when topping the tree at 18 inches, they should be cut back to about two inches long, so in case the buds on the main body do not start in the spring, the buds and the smaller branches will. If the buds do start on the main body, the branchlets may be clipped off with a shear. This is a very important point, particularly with peach trees, and if followed by planters generally would in many cases obviate the necessity of growing a new stem, where the buds happen to be blind and fail to start out at the proper height from the ground. From three to five branches should form the head of the tree, and these should be cut back to

12 inches the first winter after planting, and distributed in such a manner on the body of the tree so as to prevent crowding and the development of forks.



TREE SHOWING
NURSERY GROWTH,
AND PROPERLY CUT
BACK FOR PLANTING

up the pruning and thinning of a peach tree every year no matter how old. Topping without thinning in after years causes the development of immense amount of barren wood, and has a tendency to smother the tree. Trees should never be set closer than 24 feet apart, unless in extremely light soil where 20 feet is permissible. To obtain large firm fruit, thinning should be resorted to if the trees are heavily laden. This should be done when the fruit has set well and before the kernel has hardened.



FIRST YEAR AFTER PLANTING.

VERY RECENT INTRODUCTIONS.

Levis Cling. Originated on the place of Mr. A. Levis near Selma, Fresno County, California. Ripens about a week earlier than Tuscan Cling and averages fully as large in size. It is of a deep golden yellow, with a slight tinge of blush on one side. The flesh is identical in color to the Phillips Cling, and is clear yellow to the pit without a trace of red. It is firm with a fine grain and of excellent flavor. Its earliness, attractive color when canned combined with the fact that it holds up well in the process of cooking, is sure to make this variety a popular canning peach.

Sims Cling. We consider ourselves extremely fortunate in being first to offer this magnificent peach. Our atten-

tion was first called to this variety by the well known fruit grower A. C. Kuhn, and buds were forwarded to us from the original tree by Mr. W. A. Sims, on whose place it originated from a chance seedling. Its merits became more impressed on our minds after seeing it canned. The fruit was firm with a rich golden color and the flavor surpassed anything in the canned fruit line that has ever come



SECOND YEAR AFTER PLANTING.

under our observation. Possesses all the merits of Phillips Cling without any of its faults. Fruit large to very large, almost perfectly round, skin golden yellow, with a faint blush on one side; flesh deep yellow, of very fine texture, firm and rich, with excellent flavor and clear yellow to the pit, which is quite small. The canning qualities of this peach have been fully determined by several years of actual trial, and we regard it as the very best clingstone for canning in existence today, and recommend that it be extensively planted. The following statement



THIRD YEAR AFTER PLANTING.

from Messrs. Griffin and Skelley Company, one of the prominent canning and dried fruit firms in California, bears out our statements as to the commercial value of this peach, for which we predict a great future :

GRIFFIN & SKELLEY COMPANY
16 California Street

San Francisco, Calif., Oct. 6, 1908.

Mr. Geo. C. Roeding, President Fancher Creek Nurseries, Fresno, Cal.—Dear Sir:—Regarding the Sims Cling Peaches, samples of which were delivered to our cannery at Fresno:

We packed these samples and are most favorably impressed with them. We find the Peaches to be of fine texture, rich color and particularly fine flavor, and the best late Cling Peaches that we have ever had in our cannery. They seem to ripen between the Orange Cling Peaches and the Phillips, and there has been an urgent demand for Clings that would come in just at that time, as it would enable canners to materially increase their output of Cling Peaches, and we shall welcome the day when a sufficient quantity of these Peaches is available for canning purposes. If we were planting to-day, we should certainly put out a considerable quantity of these Clings.

Yours truly,

GRIFFIN & SKELLEY CO.



BEARING TREE PROPERLY PRUNED.

NEW VARIETIES.

Admiral Dewey. Ripens at the same time as the Triumph, but is said to be far superior to it. It is a perfect freestone, has better form and brighter color; flesh is yellow of uniform color and texture to the pit. The tree is a strong symmetrical grower and fully as hardy and productive as the Triumph. Said to be the very best early yellow freestone in cultivation. Middle of June.

Crosby. (*This is an Iron Clad Peach*). The tree is of low spreading habit, inclined to dwarf. The fruit is large, almost globular in form and deeply divided by a broad suture; bright orange-yellow, splashed with streaks of carmine on the sunny side. Pit small, a freestone; flesh juicy and sweet. Ripens between Early and Late Crawford. This variety has fruited with us; its firmness, fine appearance, globular form, will make it valuable for shipping as well as for drying. Worthy of trial. Late August.

Opulent. Originated by Luther Burbank. Hybrid between the Muir Peach and New White Nectarine. Medium to large, almost globular; skin downy, creamy white with crimson dots and blushes. Flesh firm, very juicy, flavor equal to the very best. A perfect freestone. Ripens just before the Early Crawford and an invaluable sort for home use. Early July.

Sneed. One of the earliest. Large, creamy-white, with blush cheek; flesh tender, juicy, melting and delicious; clings slightly to the pit. A valuable sort for shipping. May 25.

Triumph. Ripens with Alexander; blooms late and tree is a strong thrifty grower. The fruit is of large size, with very small pit; surface yellow, nearly covered with red, and dark crimson in the sun; flesh bright yellow, juicy, sweet and of excellent flavor. Middle of June.

GENERAL COLLECTION.

The time for ripening is given for the interior valleys; on the coast it is from ten days to two weeks later. All varieties which are not designated as clingstones are free.

Alexander. Large; greenish-white, with deep maroon shade; juicy and sweet; one of the standard sorts. Early in June.

Australian Saucer. Medium flat, hollowed like a saucer on one side, hence the name. Skin white, shaded crimson in the sun; flesh white, sweet, delicious flavor; pit very small, almost round; an oddity for home consumption only. July.

Bilyeu's Late. Originated in Caroline County, Maryland. The latest of all. Large; color white, with a beautiful blush cheek; flesh white, coarse but sweet; an excellent shipper. October 15.

Blood Cling. Fruit medium; skin downy, clouded and streaked with purplish-red; esteemed for pickling and preserving. July.

Brigg's Red May. Originated with J. B. Briggs, of Marysville; fruit medium to large; skin greenish-white, with rich red cheek; flesh greenish-white, melting and juicy; a standard early variety, and the one most extensively planted in this state. Middle of June.

Early Imperial. Originated by W. W. Smith, Vacaville. Fruit medium, deep yellow, with dark red cheek; flesh rich, juicy and very firm. A very highly colored peach and remarkable for its firmness. Its rich color and earliness combined will make it one of the most profitable varieties for early shipment. Last of June.

Early Crawford. Very large, oblong; skin yellow, with fine red cheek; flesh yellow, very sweet and excellent. Middle of July.

Elberta. Introduced from Georgia. A cross between Early Crawford and Chinese Cling; very large; bright yellow with a beautiful mottled red cheek; flesh yellow, juicy, sweet; tree a uniform and regular bearer and strong grower. Fruit very showy and a perfect freestone. One of the best market varieties, also very highly esteemed for canning and drying, selling at double the quotations of other peaches. Last of July.

Foster. Large; yellow, dark red cheek; earlier than the Early Crawford and superior in every respect; flesh is firmer, without so much red at the stone, which is smaller; one of the very best for drying, market or canning, and recognized as an excellent commercial variety. Middle of July.

George's Late Cling. Originated in Sacramento; large yellowish-white, splashed with red; flesh firm, juicy, white, colored around the pit, of rather inferior flavor; tree a tremendous bearer and strong grower. Fruit ships and keeps well, and on account of its beautiful appearance sells readily in the Eastern markets. Middle of September.

Hale's Early. Medium to large; skin greenish, mostly mottled with red; flesh white, juicy, and sweet; good for shipping. Early July.

Heath Cling. A most delicious Cling. Very large; skin downy, creamy white, with faint blush of red; flesh

white, slightly red at the pit, very tender, juicy and sweet; valuable for canning. Middle of September.

Late Crawford. Very large, roundish; yellow with dark red cheeks; flesh deep yellow, juicy and melting, flavor rich and excellent; very popular, valuable for canning and drying. Worthy of extensive cultivation. Early August.

Levy's Late or Henrietta Cling. A magnificent cling of large size; skin a deep yellow, a shade of rich brownish-red in the sun; flesh deep yellow, firm, juicy, sweet, half melting, slightly vinous. Latest of all clings and highly esteemed for canning and market. Middle of September.

Lovell. This magnificent California peach stands in the lead over all other clear yellow freestones. Its only rival is the Muir, but so close is the resemblance between the two that experts cannot detect the difference when dried or canned, and the Lovell is sold in the commercial world as the Muir without anyone being the wiser. It dries just as heavily as its rival and really makes a handsomer dried product. In size, it is large to very large and usually uniform on the tree. The tree is a much more rapid grower and is fully equal to the Muir in bearing qualities. First week in August.

McDevitt's Cling. Originated with Neal McDevitt, of Placer County. Very large; rich golden-yellow, becoming quite red when ripe; flesh yellow, firm and of superior flavor; one of the best canning peaches. Last of August.

McKevitt's Cling. A California seedling introduced by A. McKevitt, Vaca Valley, and recognized today as one of the grandest white clings. Skin clear creamy white with a delicate blush of red; flesh firm, rich, sugary, highly flavored and greenish-white to the pit without a particle of red; as a white canning peach it has no superior and its remarkable firmness even when fully ripe makes it invaluable for shipping purposes. Tree a remarkably thrifty grower and almost free from curl. Last of August.

Morris White. Fruit large, oval; skin greenish-white, with a creamy tinge when fully ripe; flesh white to the stone, firm, sweet and juicy; good for canning or drying. First week in August.

Muir. Large to very large; perfect freestone; flesh clear yellow, very dense, rich and sweet; pit small; fruit a good shipper and canner and peculiarly adapted to drying because of its exceptional sweetness and density of flesh. Has been more extensively planted than any other variety of freestone peach and the demand for it continues to be as active as ever. Last of July.

Persian Cling. Originated in Visalia, probably from the seed of the Heath Cling. Very large; clear, white skin; flesh white to the pit, very firm and sweet; a most delicious canning peach. Tree a strong grower and a heavy bearer. Much superior to the Heath Cling and worthy of extensive cultivation. Middle of August.

Phillip's Cling. Fine, large; yellow; flesh firm, clear yellow to the pit which is very small. Preferred by canners to any other variety of Cling; its firmness, fine texture of flesh and lateness, not ripening until other Clings are practically harvested, makes a demand for this variety far beyond the supply. Early September.

Picquet's Late. Large and handsome; skin yellow, with red cheek; flesh yellow, melting, sweet and of the highest flavor, a very valuable peach. Early in September.

Ringold Mammoth Cling. (*Wilkins' Cling*). Very large; skin lemon-yellow; flesh creamy white to pit, sugary, rich and delicious; tree very rapid grower and productive; fine for canning and preserving. Middle of September.

Runyon's Orange Cling. Originated with Mr. Sol Runyon, on the Sacramento river. Fruit very large, yellow, with a dark crimson cheek; flesh golden-yellow, rich and sugary, with a vinous flavor; tree an immense bearer, and is not subject to mildew like the common sort; a splendid fruit for shipping, canning or drying. Early August.

Salway. A large peach of English origin; creamy yellow with a brownish red cheek; flesh deep yellow, red at the pit, rich and sweet; a standard late peach, growing more and more in favor with the orchardists. Middle of September.

Sellers' Orange Cling. Very large; rich golden color; one of the very best Clings; and regarded as a standard among the canners; ripens with Late Crawford. Middle of August.

Strawberry. Medium size; white, marbled with dark red; flesh white, red near the pit; juicy, with a rich, delicious flavor; very attractive dessert fruit. Early July.

Susquehanna. Large, nearly globular; skin rich yellow, nearly covered with red; flesh yellow, sweet, juicy, with rich, vinous flavor; tree a strong grower; branches very tenacious, carrying a heavy crop of fruit without breaking. Very valuable for this valley and even superior to the Late Crawford; ripening a few days later. Middle of August.

Tuscan Cling. (*Tusken*, *Yellow Tuscan*). A very large yellow Cling; the earliest fine Cling; flesh juicy and of fine flavor. A good shipping and canning peach and very desirable on account of its earliness. Has become one of the most popular peaches among commercial canners and is always in great demand. Middle of July.

Van Buren Dwarf. Tree very dwarf and ornamental, and on this account valuable for very small gardens; fruit medium size; skin yellow shaded red; flesh yellow and of fine quality. Middle of August.

Ward's Late Free. Large, roundish; skin white, with beautiful crimson cheek; flesh white, juicy, rich. First of October.

Wheatland. Very large, round; yellow shaded red; flesh yellow, firm, melting, juicy, rich, sweet; tree a rapid grower and heavy bearer; fruit ripens between the Early and Late Crawford; one of the largest and finest flavored freestones and superior to either of these varieties; excellent for shipping, canning or drying. Last of August.

Yellow St. John. A favorite southern sort. Medium, orange-yellow, with red cheeks; juicy, sweet and highly flavored. Late June.

THE NECTARINE.

The nectarine readily adapts itself to California conditions, but reaches its greatest perfection in the interior valleys. It is nothing more nor less than an accidental variety of the peach with a smooth skin. Some varieties are even inclined to be slightly downy. Nectarines are of exceptionally fine flavor and when dried their amber translucency renders them very attractive, which added to their superior flavor to the peach when cooked, should cause them to be in more general demand. As to their



THE STANWICK NECTARINE.

shipping qualities, there is much to be said in their favor over the peach, so pronounced is this that they have been shipped to England and successfully marketed there, where they are much sought after and regarded as a luxury. The culture of the nectarine is in all respects precisely similar to that of the peach, its habits being the same.

Advance. Large, round; skin green, blotched with red and brown on sunny side; flesh greenish-white and sugary. Its earliness, large size and productiveness makes this variety a valuable acquisition. Early July.

Boston. Large, oval; bright yellow, with deep red cheek; flesh yellow, with a pleasant sub-acid flavor; tree a fair bearer. Late July.

Humboldt. Very large; skin bright orange-yellow, streaked and mottled with dark crimson in the sun; flesh orange, very tender and juicy. The only yellow nectarine outside of the Boston; by far a superior variety. Early August.

New White. Large; skin greenish-white; flesh white; tender, juicy; stone small and free; one of the best varieties for drying. Early July.

Stanwick. Originated in England from seed brought from Syria, and it is no exaggeration to say that is the best nectarine in existence today. Very large, almost globular, often as large as a peach; skin pale, greenish-white, shaded into deep rich violet in the sun; flesh white, tender, juicy, rich, sugary and delicious. Will average fully two and one-half inches in diameter. For drying and shipping not excelled by any other variety. August and September.

THE QUINCE.

A standard fruit which has held its own without material modification for upwards of a hundred years. It likes a deep and loamy, moist soil. Its distribution is quite general, doing well along the Coast and in the interior, where there is sufficient moisture, or irrigation is practicable. Though not of equal importance with the peach and apple, nevertheless a few trees should find a place in every family orchard. To cut the new growth back about one-half is deemed good practice, and certainly has a tendency to develop strong umbrageous trees and fruit of exceptionally large size.

NEW VARIETIES.

Pineapple. Originated by Luther Burbank. The name comes from the flavor which is suggestive of the pineapple. The fruit in form and size resembles the Orange quince, but is smoother and more globular. Makes a superior jelly; can be eaten raw and will cook as tender in five minutes as the best cooking apple; possesses a most exquisite and delicious flavor not equaled by any other quince. Late August.

Smyrna. This remarkable fine quince was introduced by us from the Aidin District, near Smyrna, in 1887. The tree is a rapid, strong grower, and immensely prolific, and is especially adapted to the interior valleys, on account of its heavy foliage. The fruit is very large, and of a lively yellow-lemon color, presenting a fine appearance. The flesh when cooked is very tender, having a delicious flavor, and most pronounced quince taste and odor. It ripens about the same time as the Orange quince, and as a keeper it cannot be surpassed. September to October.

GENERAL COLLECTION

Apple or Orange. Large; fine golden color; valuable for preserves or flavoring; very productive, the most popular variety. September.

Champion. Large to very large; skin strongly russeted around the stem; below a lively yellow; flesh cooks very tender, flavor is most delicious. More productive than the Orange, ripening two weeks later. Late September.

Rea's Mammoth. Of recent introduction, a strong grower, and very productive. October.

THE NUT FRUITS.

THE ALMOND.

THE cultivation of the Almond probably had its origin in ancient Syria. The types introduced into California were brought over from European countries aligning the Mediterranean Sea. They did not prove profitable, and it was not until entirely new types from seed were introduced by A.T. Hatch that the culture of almonds became of commercial importance. Even these new types have not been as profitable as they should be, largely due to growers planting them in localities of a frosty character. No extensive plantings should be made in localities subject to late spring frosts. Many varieties are more or less sterile and therefore it is never advisable to plant large blocks of any one variety, but instead to alternate with several, but never more than four rows in a block by themselves. There are two tribes or races of Almonds—the bitter and the sweet. The former has no commercial value in this country, but in the Mediterranean it is used in the manufacture of flavoring extracts and prussic acid. In this country, however, it makes an excellent stock for the better types, its bitter root being immune to the attack of gophers.

The sweet almonds are divided into two classes, the hard and soft shell. The former, outside of the Jordan, (introduced in recent years) has no value except for seed purposes. The soft shell type produce the almonds of commerce. Thinnest shelled forms of these? Those which can be easily broken between the fingers, are classed as paper-shells.

Almond trees are budded on almond and peach roots; the former should be planted in light well drained soils as the roots penetrate deeply and will withstand drouth far better than they will standing water. The peach root makes a very good stock for the almond on soils where the almond would not thrive at all.

When transplanting into orchard, almonds are headed to twenty inches from the ground. The head should be formed so that the lowest branch will not come closer than ten inches from the ground. The following winter thin out to from three to four main limbs, properly distributed on the stem and cut these back to within a foot of their attachment to the trunk. The second winter give them another cutting back, leaving a few inside branches, provided they do not crowd the interior of the tree. The third winter, pruning need not be so severe, as the tree will now have assumed the much sought after vase form, but thinning out will have to be practiced in later years to prevent over crowding.

The nuts are harvested by shaking the trees and knocking those off which do not fall readily with light poles. As soon as the hulls open readily they should be gathered. The hulling should be done as soon as possible after gathering; the nuts should then be exposed on trays to the sun

for a few days, raking occasionally until the kernel is slightly hardened. Never expose the almonds to the fumes of sulphur until the nuts are dry, or the fumes will penetrate into the kernel and impair its flavor. Before sulphuring, sprinkle the nuts with water so that the surface of the shell only is moistened. The nuts should be sulphured for from two to three hours, but this is an unnecessary expense if the nuts can be sold at satisfactory prices without incurring it.

The trade demands a smooth, symmetrical, plump kernel, and twin kernels which are so welcome to searchers for philopenas, are a detriment and militate against the sale of the nuts. As the time of maturity for the respective varieties is not of such material importance, we have designated the comparative blooming periods; these dates will vary more or less according to the season and locality in which the trees are growing.

NEW VARIETIES.

The Jordan. This new sort is the famous Spanish variety so long sought after by nut growers. First introduced by the late John Rock, of Niles, and later by the United States Department of Agriculture. The name is a corruption of the French word "jardin," meaning simply "garden" almond. The nuts are long and are hardshells; the kernels are single, narrow, long and plump, filling the entire cavity; superior in flavor and covered with a thinner papery skin or pellicle than any other almond. The kernel is always removed from the nut proper when exported. In this form they bring from eight to ten cents more per pound than any other variety. The tree is a strong thrifty grower and heavy bearer and will probably do much to give almond growing in California a strong impetus.

GENERAL COLLECTION.

Drake's Seedling. Originated with Mr. Drake, of Susan, California; of the Languedoc class; bears abundantly and regularly where the Languedoc is a total failure. First week in April.

Harriott's Seedling or Commercial. One of the largest of the soft shell almonds; originated in Visalia, California, where the original tree bears regularly and abundantly; shell softer than the Languedoc; nut long, quite large, kernel sweet; this is one of the finest ornamental trees, having a fine dense head; makes a very fine avenue tree. Last of February.

I. X. L. Tree a sturdy, upright grower, with large leaves; nut large, hulls easily, no machine being needed, nor is any bleaching necessary; soft shell but perfect. It bears heavily and regularly. Highly recommended by all orchardists who have tried it. Middle of March.

Languedoc. The best of the foreign varieties yet tried in California; nut large; kernel sweet. Last week in March.

La Prima. The latest of Mr. Hatch's introductions. Tree a very uniform and symmetrical grower; nut resem-

bles Ne Plus Ultra, but averages somewhat larger in size, not borne in clusters, but evenly distributed throughout the tree. Middle of March.

Ne Plus Ultra. Introduced by Mr. A. T. Hatch. Tree a rapid grower; leaves rather large; a heavy and regular bearer; nuts large and very long in shape; soft shell; hulls free. Middle of March.

Nonpareil. First called Extra. Of a weeping habit of growth, smaller foliage than the I. X. L., but still forms a beautiful tree; an extraordinary heavy and regular bearer, with very thin shell, of the Paper Shell type. One of the best. Last week in March.

Peerless. Is a deservedly popular variety grown quite extensively in Sacramento County, where it is highly esteemed and given preference by some growers to the I. X. L., which it closely resembles with the exception that the nut is much larger. The tree is a regular and heavy bearer. Middle of March.

Texas Prolific. In habit very closely resembling Drake's Seedling. Kernel generally single, very plump and of medium size, shell soft, hulls very easily. It is a regular and abundant cropper, and never fails to produce a good crop. The demand for the trees for several seasons has far exceeded the supply. It blooms late and its blossoms are of such a texture that they seem to be frost-proof. Late March.

THE BUTTERNUT. *Juglans cinerea*.

A native of the middle west states and found most abundantly and reaching its highest development in the Ohio River Basin. The tree seems to adapt itself to California conditions, particularly in the interior valleys, in river bottom locations where the soil is always damp and admits of the ready penetration of the roots. Trees rarely come into bearing before eight years. The nuts are of the highest flavor and second only to the Pecan. They are pronounced hardshells, conical in form, pointed at the apex with a rough and a very much furrowed exterior.

THE CHESTNUT. *Castanea*.

Bearing trees in many sections of California with widely variable soil and climatic conditions, give ample evidence of the possibilities of the culture of this most delicious nut. California should supply not only our home markets, but also nuts for exports, and although chestnut trees have been planted in a limited way for a number of years, practically no commercial groves are in existence. California therefore imports chestnuts from Italy and Japan to meet her requirements. Chestnuts thrive fully as well on a heavy clayey soil as they do on a sandy loam, providing it is retentive of moisture and is deep enough to allow the roots to penetrate without hindrance. In the interior valleys they should be planted in river bottoms, or they may be planted on the plains, providing the soil conditions are satisfactory, either sub-irrigated or the moisture being supplied by surface irrigation. As a rule all failures to successfully grow them in the interior can be traced to the sunburn of the exposed high pruned body of the tree. Low heading is therefore one of the important points in connection with their successful culture in the interior. As the trees do not bloom until all likelihood of frost has passed there is no danger of injury from this source, and bounteous crops are harvested from them annually. Preference should always be given to the grafted trees by the orchardist; such trees will commence to bear within three years after planting. The nuts are of a uniform size and quality and the increased cost of the grafted trees over the seedling will be more than repaid with the first years crop. Beyond its economic value for its fruits, the

tree possesses advantages for avenue planting, and makes a very striking ornamental tree with its dark, glossy green leaves when planted singly. Where solitary trees fail to bear, it usually arises from the fact, that the staminate and pistillate blossoms do not mature at the same time. Trees should be planted from 30 to 50 feet apart in a square.

After the head of the chestnut tree has once been formed, very little pruning, except to remove interfering branches, will be found to be necessary.



THE I X L ALMOND.

American Sweet. The well known native tree of the eastern states. A stately tree, with stout, spreading branches, forming a broad, round-topped head. Flowers showy and when in full bloom, one of the handsomest of trees. Nuts rather small but sweeter than those of the European types.

Italian or Spanish. Originally introduced from Asia Minor into Europe and valuable both for ornament and

fruit. Nut much larger than the American Sweet. This is the variety so extensively exported from Italy packed in large wooden barrels.

Japanese Mammoth. A small tree of compact, symmetrical habit, with slender branches and handsome foliage. Begins to bear fruit much earlier than any other variety. Nuts very large, the individual nuts being over an inch wide and weighing one and one-half ounces each. Only grafted trees can be relied on to be true to name.

Marron Combale. Of French origin and far superior to the Italian or Spanish Chestnut. Nut large, sweet and highly flavored; trees stand the sun well, the wood is of a yellowish brown color, the leaves narrow and very glossy. An eminently satisfactory variety in California.

Marron de Lyon. In habit of growth, very similar to the preceding, but the nuts are more roundish and are somewhat larger.

Numbo. Originated with Mahlon Moon, Morrisville, Pennsylvania, from seed of an imported tree. Tree a good grower; close, compact head; nuts large, handsome and as fine flavored as any large chestnut.

Paragon. Originated in Germantown, Pennsylvania. Tree hardy, spreading, vigorous, very productive; burr very large; nut large, three to five in burr; kernel fine-grained, sweet and of good quality.

Ridgely. Originated in Wilmington, Delaware. It is one of the hardiest of the large chestnuts of American introduction; bears two to three chestnuts to the burr; the kernel is of exceptionally good quality although somewhat smaller than Paragon.

THE FILBERT. *Corylus*.

As a family, they may be described as large shrubs or low trees. They thrive best in a warm, moderately moist, loamy soil with a dry subsoil which will retard an excess of wood growth. The wild Hazelnut does well in the coast counties and in the Coast Range Mountains, and is indigenous in the lower mountains and foothills through Oregon and Washington to British Columbia, and also in the Sierra Nevada Mountains at elevations of five to six thousand feet growing along the banks of small streams of water. All are unisexual having the staminate blossoms in catkins, which make their appearance on the wood of the previous year, being quite visible as early as August. The pollen does not scatter until April of the following season. The pistillate or female blossoms compose a star-like tuft of crimson stigmas, pushing their way out in the young spring growth. The pistillate blossoms sometimes bloom later in the spring than the staminate blossoms, and in such cases it is necessary to supply pollen from other sources at the proper time, to secure a crop of nuts. The Hazelnuts make very attractive dessert fruits and they have a peculiar, pleasing flavor found in no other nuts.

With so many sections possessing climatic conditions favorable to their successful culture, there is no reason why they should not become of commercial importance on this coast. Our collection comprises the best European and American varieties, although the former have given the most satisfactory results.

Cosford. Thin shelled; nut large, oblong, shell so thin as to be easily broken between the finger and thumb; kernel large and well flavored. An excellent early nut, and the tree an abundant bearer.

Fertile de Coutard. Nut very large, broad, pointed; kernel completely filling the shell and very highly flavored; an early and abundant bearer.

Merville de Bolwiller. Nut large, rounded at the base, tapering to the point; shell thick; kernel fine flavor and of the very first quality.

Prolific Cob. Nut of large size, oblong, shell pretty thick, of a brown color; kernel full and very rich flavor; this one of the best.

THE HICKORY. *Hickoria*.

This very striking and profitable wood producing tree of the eastern and middle states has never been extensively planted in California, there being very few localities where the climatic conditions are favorable for its perfect development. Deep, well drained, fertile loams, either of sandy or clayey nature, are the most acceptable for the rapid development of the tree, with a humid, moderately warm climate in the summer months. The nuts have a peculiar, rich, nutty flavor, equaled by no other variety. The trees are very striking with their straight tall trunks, crowned with a wealth of lustrous foliage.

Shagbark Hickory. (*Hicoria ovata*). The outer bark of the tree breaks at varying angles into broad, thick layers, which remain attached to the trunk, presenting a very shaggy appearance, hence the name. Branches form a narrow, round-topped crown; leaves compound with 5 to 7 leaflets; the nut is angular with a hard though thin shell; the kernel is plump, sweet and delicious, and as it drops out of the shell readily when cracked, it is very extensively used as a nut meat by confectioners.

THE PECAN. *Hicoria pecan*.

Of the eight or nine species of hickories the one which produces the most marketable fruit and in the most profitable quantities is the pecan. A native of the southern states, it is today the only nut grown there and to a limited extent in the middle states, which has any commercial importance. Texas is probably the largest producer of pecans, the crop aggregating several millions of pounds and gathered almost exclusively from seedling trees. The business of cracking pecans and selling the meats put up in attractive packages has created a demand for the nuts, which is increasing at a very rapid rate. It is largely due to the impetus the industry has received in recent years that has encouraged the planting of trees on a commercial scale and of the improved papershell types. The difficulty of extracting the meat from the hard shell seedling nuts has been one of the causes for the nut not being more popular as a dessert fruit. The thin shells of the improved types, the ease with which the meats are removed and the noticeable absence of the fibrous segments found in the hard shell nuts, which possess a peculiar acrid taste, will do much to make it popular.

The lack of information regarding pecans in California has been due to the fact that an impression has prevailed among our horticulturists in general that our climatic conditions are not favorable to their successful culture. That this is an error is quite evident, for old trees, no doubt seedlings, are found growing and producing good crops annually in the Sacramento and San Joaquin Valleys. A number of seedling trees, two feet and over in diameter, are growing one mile north of Fresno, bearing abundant crops.

It is only within the last ten years that pecans have been regarded of sufficient commercial importance to cause groves to be planted in the middle and southern states, and this condition of affairs has been brought about by the unexcelled merit of the Papershell pecan. In California only a very few Papershells are to be found; none of these are over ten years old, with the most complete assortment of varieties on the Roeding Place.

The trees thrive in a great variety of soils, doing well in a stiff clay or porous sand, and in Texas they are said to do well on soils underlaid with hardpan, provided proper

precautions are taken to blast it before planting. Our recommendation is that the planting of trees be confined to moderately deep soils where moisture is either supplied by natural means or irrigation. In our opinion pecans will prove a valuable acquisition to our list of nut fruits in the warm interior valleys of California, Oregon and Washington. In the coast counties, although the tree grows well, it does not mature its nuts, due to the cool, foggy weather, which does not seem conducive to the proper development of the fruit before the dormant season sets in.

The advisability of planting only named varieties of grafted or budded trees is conceded by experienced planters. When trees are grown from selected Papershell seeds, they are liable to produce nuts of variable character in shape, size, thickness of shell, and quality of meat. The additional cost of growing named varieties either by budding or grafting is caused by the very small percentage which a nurseryman succeeds in growing. If

over 30 inches, they may be cut off to this length, also remove all broken or bruised roots before planting. When set the trees should be cut back to within 3 feet of the ground. The head of the tree should be restricted to about three framework branches and with the exception of thinning out branches, which crowd the interior of the tree or that in terfere, no pruning is necessary.

GRAFTED TREES.

Frotscher. Originated in Louisiana. One of the best. Nuts cylindrical, tapering slightly; shell thin, parting easily from the kernel; flavor delicate, quality excellent; tree thrifty and productive.

Pabst. Another valuable addition to the list of improved Pecans. Nut cylindrical, moderately large, soft-shell, parting well from meat; kernel particularly well filled, bright and of excellent quality.

Russell. Tree very vigorous and productive. Nut oval, pointed, large to very large; shell very thin; a true papershell; kernel plump; flavor delicate, and of superior quality.

Stuart. Introduced by the late W. R. Stuart, Ocean Springs Miss. -A standard for commercial orchards. Has all the points for a profitable pecan; large size, desirable in shape and fine in appearance; always well filled, meat of good flavor.

Success. A grand nut of recent introduction; is of the largest size, cylindrical and tapering at the apex; shell very thin and parting freely from the kernel, which is full, plump

and of the very best quality. Tree vigorous and thrifty and a regular and abundant cropper.

Van Deman. Large and oblong in shape, running 45 to the pound; shell moderately thin, cracks well and yields plump meats of good quality.

SEEDLING TREES.

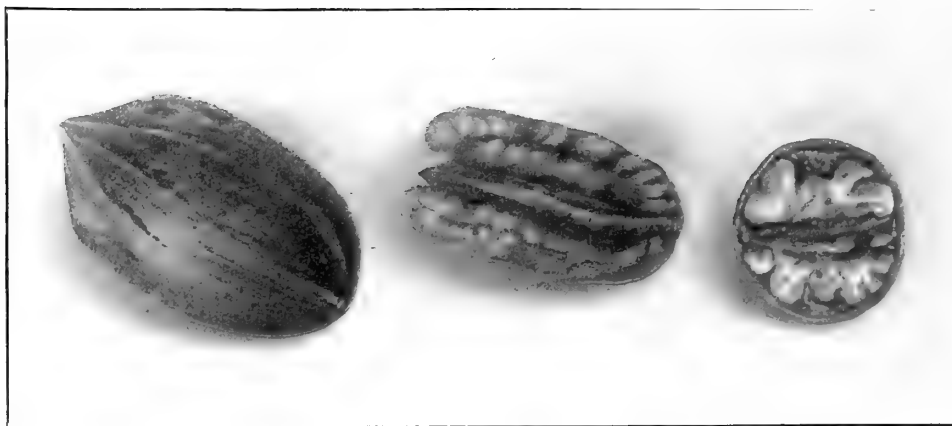
Common Pecan. Grown from selected hard shell nuts. Tree a thrifty, rapid and symmetrical grower producing nuts of average quality.

Papershell Pecan. Nuts of superior quality to the common pecan, trees being grown from the finest selected papershell pecans. Nuts are larger, and possibly may be papershells, the meat is rich, sweet and easily removed from the shell.

THE PISTACHIO.

Pistacia vera is the botanical name for the Pistachio nuts of commerce, sometimes called green almond. Very extensively used for coloring and flavoring confectionery, imparting a peculiar but agreeable flavor which can not be acquired from any other source. In the domains of the Sultan of Turkey, it is sold on the streets by vendors, who simply prepare the nuts for consumption by boiling them in salt water.

It thrives best in the warm interior valleys and gives promise of assuming important commercial proportions when the many new and valuable varieties introduced by the United States Department of Agriculture become more widely disseminated. The tree is dioecious, that is the male and female flowers are on different trees. It is therefore necessary to have trees of both sexes to produce nuts.



THE STUART PECAN. LIFE SIZE.

the orchardist will only bear in mind that the increased outlay for budded or grafted trees is offset by the fact that they will come into bearing in less than half the time that seedlings do, and that the nuts will sell for four times as much on the market, their economy is at once obvious.

The Pecan, like the walnut is unisexual, that is the male and female organs are not in the same blossom. It sometimes happens that the male blooms (catkins) mature and release their pollen grains before the pistillate or female bloom is in thereceptive stage and when this occurs the nuts are hollow shells. It is therefore advisable in planting a Pecan grove to plant two to three varieties and alternate with several rows of each. Trees should be planted not closer than 40 feet and on rich bottom soils 50 feet is better. It is entirely practicable to plant some other variety between temporarily until the Pecan commences to bear profitable crops, when the other trees can be dug up. The oft repeated remark that only trees which have never had their tap root cut will bear, has time and again shown to be fallacy, in fact no harm will result from a moderate shortening in of the tap root, for the tree is really benefited by the more spreading root system. The difficulty of securing a uniform stand and protecting the trees from injury; the marked variation in the size of the trees when the nuts are planted in the orchard where the trees are to grow, has further discouraged this method of procedure by practical men.

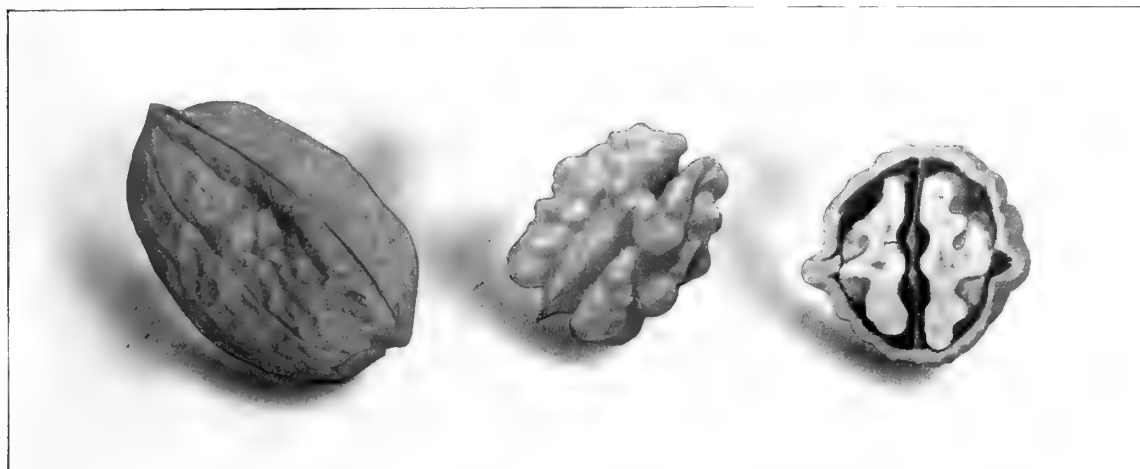
In setting a Pecan tree, a hole 24 inches in diameter and 30 inches deep is usually large enough. The trees should be set at least two to three inches deeper than they stood in the nursery rows, proper precaution being taken to have the reddish, brown tint which is the crown of the root, underground, and it should never be exposed even after the earth around the tree is settled. If tap-roots are

The nuts are borne on the female tree in clusters somewhat like grapes, but more scattering and are covered by a thin, purplish light green husk.

THE WALNUT. *Juglans regia*.

Among the edible nuts grown in California, none equal in commercial importance the walnut. Under favorable

mence to bear profitable crops in half the time of seedlings; (2) they reproduce the variety from which buds and grafts were taken, so there is an absolute certainty that the character of the parent tree will be transferred to the young stock; (3) perpetuation of the bearing qualities of the parent tree with nuts of identical quality. These points form the basis of success for the grower, for the extra price realized for the product of the grafted

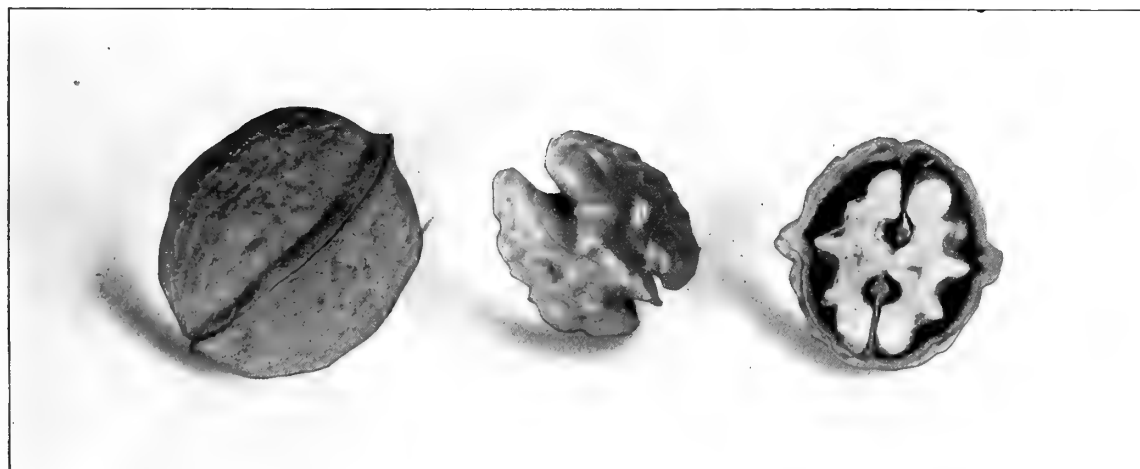


THE FRANQUETTE WALNUT. LIFE SIZE.

conditions of soil and climate the tree attains an immense size, specimens some sixty feet high, with a spread of fully one hundred feet, being often conspicuous features of the landscape. It prefers a rather loamy, deep, rich soil, finding its greatest luxuriance in such lands. No nut yields larger and more profitable returns than the walnut; the tree is practically free from insect pests, and when once established it requires little care as far as pruning is concerned. Good and thorough cultivation is necessary for activity in the growth of the tree, causing it to respond with bountiful crops.

trees in connection with their early bearing qualities more than offsets the additional first outlay. In addition to other facts mentioned, the California Black Walnut (*Juglans californica*) root which is used as a stock has a decided influence in causing the graft to grow more vigorously and it will also adapt itself to a wider range of soil conditions than trees on their own roots. Indifferent success has been met with in grafting and budding walnuts thus far; which accounts for the higher prices charged for grafted trees.

For commercial planting, trees are usually set 40 feet



THE PLACENTIA PERFECTION WALNUT. LIFE SIZE.

The importance of this industry to the state is shown by the annual output which is about 8250 tons. These nuts are mostly the product of seedling trees, but within the last few years growers are commencing to realize the advantage of selecting the best types and grafting over unproductive trees, and those producing inferior nuts, to the best strains.

The marked advantage of grafted trees over seedlings may be summed up as follows: (1) they usually com-

each way, although in some instances where the soil is exceptionally fertile, trees are set 50 feet apart, for as the tree matures, it makes a wide spreading top, so that it is no uncommon sight to see branches even at the latter distance interlacing. The very positive opinion possessed by some growers, that the cutting of the tap root in transplanting young trees injures them to such an extent that the trees never acquire their full vigor, and that their bearing qualities are impaired is a mistaken idea. The large

number of commercial orchards, and the most profitable at that, in California today are transplanted trees. The walnut, unlike the general run of deciduous trees, should not be cut back severely in transplanting from the nursery but should be cut back to three and one-half feet after planting. Dig the holes not less than three feet deep and two feet in diameter and cut the tap root to thirty inches, cutting off all bruised and broken lateral roots before planting. Be sure to settle the soil around the tree with water and plant so the crown of the root which is quite dark, is at least three inches below the surface of the soil. As a rule the trees make very little growth the first year. For the first few years during the period of dormancy, some of the branches making an excessive growth are shortened back to retain the general symmetry of the tree, but after the head is once established, only the low limbs which bend down and interfere with cultivation and cross limbs in the interior of the tree, should be removed. The stem is apt to sunburn, so it should be given protection the first two years by wrapping with paper or burlap; if obtainable yucca or tule tree protectors are far more satisfactory.

Much of the difficulty in getting isolated walnut trees to bear can be attributed to the male blossoms maturing either before or after the female flowers are in the receptive stage. The walnut is unisexual, that is, the flowers of both sexes although produced on the same tree, do not occur in the same flower. To overcome this trouble, when planting an orchard, not more than two or three rows of a variety should be planted together, or the rows can even be alternated, and by following out this plan, this barrenness may be overcome.

Several of the French varieties being exceedingly late bloomers are finding very much favor in localities subject to late spring frosts. Strange as it may seem, it is nevertheless a fact, that certain of these types will be just commencing to swell their buds when the ordinary seedlings are out in full leaf. In no other trees of the same family is the remarkable variation in leafing out so noticeable as in the walnut, and in the descriptions of the varieties which follow, we have indicated this period taken from actual observation of the varieties in nursery rows.

GENERAL COLLECTION.

A'Bijou. (*Large Fruited*). This immense nut derives its name from the uses the shells are put to in France by fancy goods manufacturers who make ladies jewel boxes out of them. The nuts are of rather irregular form and deeply furrowed; the quality of the kernel is excellent. Growth 4 to 6 inches April 5.

Chaberte. Originated in France over a century ago by a man named Chaberte, hence its name. Blooms late. The nut is roundish, oval and of fair size; kernel extra fine flavor; a good bearer. Tips just starting April 8.

Cut-Leaved. One of the most striking features of this variety is its deeply cut, lacinated foliage, making it a most graceful ornamental tree, worthy to be planted conspicuously in the garden or front yard. The nut is very pretty, fair size, round, with a very smooth shell and sweet kernel. Buds just swelling April 8.

Ford's Improved Softshell. Grown from seed of the Santa Barbara Soft Shell, from selections made in 1880 by George W. Ford of Santa Ana, California. The trees are abundant croppers, the nuts are more uniform in size and form; brighter and smoother than the parent, and much superior, in thinness of shell and quality of kernel. Growth 6 to 8 inches March 20.

Franquette. The intrinsic value of this great French variety, originated by a man named Franquet one hundred and thirty years ago in the southeast of France, is just beginning to dawn on the nut growers of California. It is quite large, of an elongated oval and very attractive form; kernel full, sweet and of a rich nutty flavor, covered

by a pellicle which is almost white. The only orchard of any size of this variety is located at Santa Rosa. On April 12, 1905, when other varieties were well leafed out, the buds had just commenced to swell on the trees in this orchard. The nuts command the very highest market price. Buds just swelling April 15.

Mayette. This is the famous nut imported under the trade name Grenoble into the United States. It also originated over a century ago, and its name is derived from the introducer. Form broad, size above medium, and unequaled as a dessert nut. An abundant bearer, starts very late in the spring, thus escaping disastrous late frosts. Buds just swelling April 15.

Mayette Rouge. Identical with the above, same shape, form and size, the only difference being that when the nut comes out of the husk it looks reddish. Leafing out the same time as the preceding.

Parisienne. Large, excellent, starts late in the spring. Originated in the southeast of France and on account of its exceptional beauty named Parisienne in honor of the capital of France. The nut is large, broader at the small end than the Franquette and Mayette, and has a very pretty shape. Buds swelling April 12.

Placentia Perfection. This chance seedling from the Santa Barbara Soft Shell is now generally recognized as a leader in the Southern California counties. The nuts sell for from 1½ cents to 2 cents per pound higher in the open markets. The claims made by the originator, Mr. J. B. Neff, of Anaheim, California, have been fully sustained. The tree is a very vigorous grower, in fact, so much so is this the case that it is sometimes difficult to train in symmetrical form. The fifth year from planting it commences to produce nuts in abundance, and it then assumes a good habit. Growth 6 inches April 8.

Praeparturien. Fruits when very young, very productive, producing large crops regularly; flowers late and is therefore not affected by frosts. Growth 2 inches April 8.

Santa Barbara Soft Shell. Originated by Joseph Sexton of Santa Barbara, Cal. The nut is large, shell thin, so that it is readily broken by the hand. The kernel is white, full and sweet. The favorite variety in the southern part of the state. Spring growth starts March 18.

NATIVE VARIETIES.

American Black. (*Juglans nigra*). EASTERN BLACK. So called by reason of having been produced from seed imported from the East. Attains great size and is of majestic habit; but of very much slower growth than the following, the nut is of medium size, very hard and somewhat furrowed. Growth starts April 15 to May 1.

California Black. (*J. californica*). An exceedingly rapid growing tree, indigenous to central and northern parts of the state. Stands transplanting readily and is a fine stock for budding and grafting. The nut is of medium size, shell very hard and smooth; kernel rich and oily. The tree attains a great height and it is no uncommon sight to see trees 100 feet high, with a corresponding spread of branches. New foliage out April 1.

JAPANESE VARIETIES.

Heart-Shaped Japanese Walnut. (*J. cordiformis*). The tree is a rapid grower and bears at four years from the seed, and is said to attain a great age. The kernels are of a peculiar heart-shape which can be readily extracted whole by boiling the nuts for about five minutes and cracking them while still hot. The meat is very sweet and is used very extensively in the form of candied nuts.

Japanese Walnut. (*J. sieboldiana*). Tree is very vigorous and of handsome form, with immense leaves, having a charming shade of green; the nuts are produced in clusters, shell smooth and much thinner than the native American Walnut; the kernel is sweet, has the flavor of the butternut, but is less oily.

THE FIG IN CALIFORNIA.

IT is safe to assume that not many years will elapse before California will be producing enough figs to give her the same prominence in the horticultural world as a fig producer that she has already attained in the production and successful marketing of other fruits.

That she has not become more prominently identified in this great and promising industry is directly attributable to the fact that her dried figs have been inferior to those imported from Smyrna, Asia Minor, which have been famous the world over for hundreds of years. The United States today consumes more Smyrna figs than any other country in the world, and even the import duty of 2 cents per pound has never proved an obstacle to an increased importation from year to year. A mere comparison of California's annual production which has never exceeded 3000 tons against 20,000 to 30,000 tons in Smyrna, indicates what is in store for the horticulturist whose soil and climatic conditions are favorable for perfecting the fig.

Figs grown in the United States, either for eating fresh or for drying are of one species, viz: *Ficus carica*. All told there are in the neighborhood of 200 or more varieties in cultivation.

To the oft repeated question how does the fig produce fruit without first setting flowers, the reply is that although to all outward appearances devoid of bloom, nevertheless there are thousands of flowers inside the fruit closely grouped around the rind, which is really the receptacle for them. As these inconspicuous flowers, though lacking all the beauty of those found in most deciduous fruit trees, form a basis for the proper classification of the fig, they will be considered briefly, so as to convey a clearer understanding of the subject. The groups are designated as follows:

Male Flowers. Found with rare exceptions only in the wild or caprifig, the parent fig of all the cultivated types. Each flower has four stamens.

Female Flowers. Are only found in the edible type of figs, and rarely in the caprifig. Their very close confinement makes their fertilization very difficult and even then it can only be accomplished by one insect, which was created for no other purpose. The flowers consist merely of a style, stigma and ovary.

Mule Flowers. These are imperfect female flowers, so constructed that they can not be fertilized, therefore do not produce seeds. These flowers are found covering the entire interior of that family of cultivated figs, which mature their fruits, although the seeds are barren without the agency of the fig wasp. These figs are designated under the head of the Adriatic type.

Gall Flowers. Are found only in the caprifig, and it is in the ovary of these flowers that the minute wasp *Blastophaga grossorum* breeds and passes through its various stages before reaching maturity.

HOW THE FIGS ARE CLASSIFIED.

Caprifigs or Wild Figs. These come first, for it is from them that all cultivated types of figs have sprung. They produce male, female, and gall flowers, but never mule flowers. Their value lies principally in the fact that they furnish a home for the fig wasp and have one crop, the Profichi, with an abundance of staminate pollen producing flowers.

Smyrnas. Are found growing principally in the great fig district 40 miles distant from Smyrna, Asia Minor, also in Greece and to a limited extent in Southern Italy.

They differ from the common type of figs chiefly because their female flowers if not fertilized by transferring pollen from the wild or caprifig through the agency of the fig wasp, *Blastophaga grossorum*, or artificially, the figs when about the size of a marble dry up and drop to the ground.

Adriatics. These are the common figs which have been grown in California since the advent of the Mission Fathers, their flowers with occasional exceptions are all mule flowers. Through years of cultivation they have acquired the faculty of producing good figs without having their flowers pollinated. From a technical standpoint, however, they are imperfect, the seeds being hollow shells.

LOCALITIES FAVORABLE FOR THE FIG.

It is safe to say that no deciduous tree grown in the semi-tropic and temperate zones, will adapt itself to a wider range of climates and soils than the fig. Figs can be used for such a variety of purposes, namely: drying, canning, preserving, shipping in the fresh state and for home use, that a wide range is open for their successful exploitation. To produce the finest dried figs, with the thinnest skin and rich in sugar, a warm dry atmosphere is an important factor. They will withstand a temperature of 18° Fahrenheit in the winter months, without being injured. Hence their geographical distribution is very wide, embracing all portions of this State, the sheltered sections of Arizona, New Mexico and southwestern Texas, the extreme Southern States, Old Mexico, the Hawaiian Islands and Australia.

PLANTING AND PRUNING.

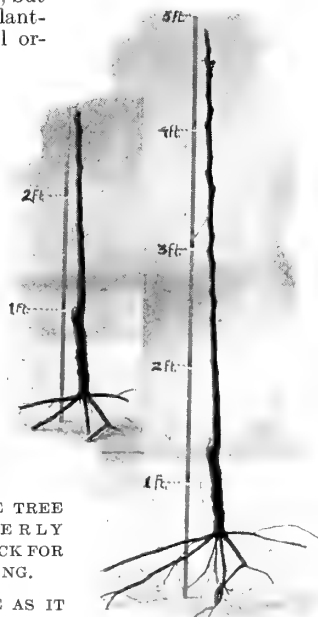
Bear in mind that the fig tree is of a spreading habit and is also a great surface feeder, and therefore avoid planting the trees too close together. On the general run of soils 25 feet on the square system is a good standard distance which may be increased

if soil conditions warrant, but trees should never be planted closer for commercial orchard purposes.

As the fig tree is long lived and will in time occupy a large area, it is practicable to plant trees 40 feet apart alternating with other fruit trees, or grape vines may be planted between the rows, which may be removed in later years. As a border tree for inclosing orchards and vineyards, or for aligning avenues, it not only makes a striking effect but is also very profitable.

Although the fig will stand all kinds of neglect after it is established, too great emphasis cannot be laid on the close attention which must be given in transplanting

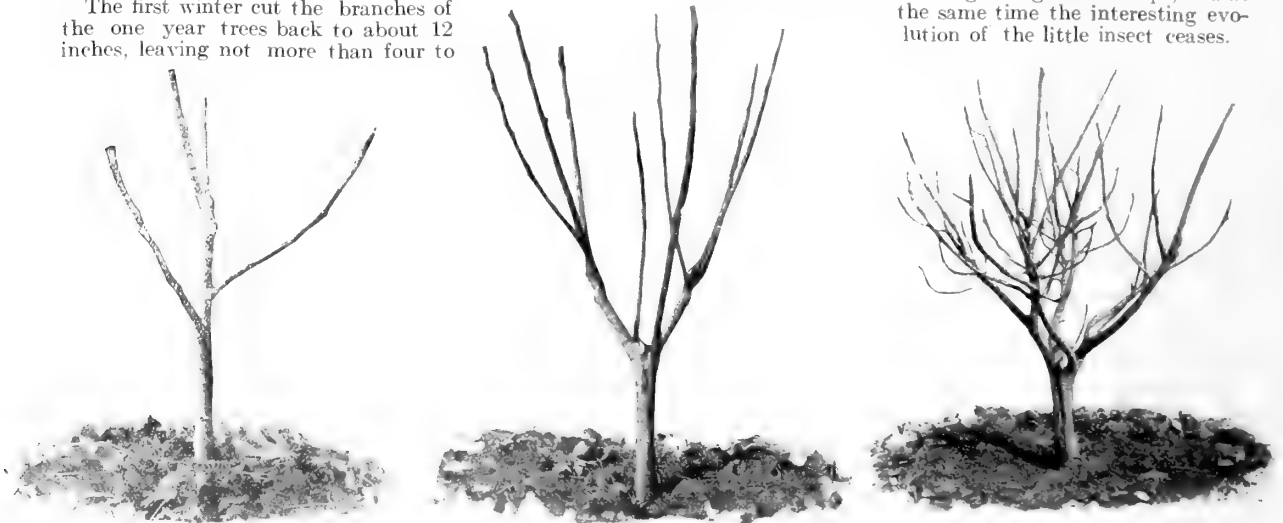
the trees from the nursery to the orchard. The roots of a fig tree are very susceptible to exposure, hence should be carefully covered in transferring from the trenches to the



field. Before planting cut off all bruised and lacerated roots and make a fresh cut on all other roots, so they have a smooth clean surface. The tree when planted should not stand over two inches deeper than it stood in the nursery row. Never neglect to settle the earth around the trees with not less than ten gallons of water. After the water has soaked away fill in with fine soil without tramping. No greater mistake can be made than to wait for rain or for water to be turned into the irrigating ditches. After the tree is planted, cut back to twenty inches from the ground, and cover the wound with rubber paint or grafting wax.

The first winter cut the branches of the one year trees back to about 12 inches, leaving not more than four to

eggs, and therefore can not perpetuate its species, and is lost. Through a wise provision of nature in this case the well being of the tree is conserved until it arrives at the age it should have regular crops. When the trees reach their fourth year they (particularly Roeding's Caprifig No. 1) produce all three crops of caprifigs, the Profichi already referred to, appear in March and reach maturity in June; the second crop called Mammoni, pushes out in the latter part of that month and matures in September, when the third crop, Mamme, then makes its appearance. The insect enters this crop, lays its eggs, which develop as far as the larvae form, when the growing season stops, and at the same time the interesting evolution of the little insect ceases.



FIRST YEAR AFTER PLANTING.

SECOND YEAR AFTER PLANTING.

THIRD YEAR AFTER PLANTING.

make the head of the tree. Have these distributed in such a manner, that there will be sufficient room for them to expand without crowding as the tree grows older. The second season cut off not less than one-half of the new growth, leaving out more than two shoots on each of the frame work branches. Any branches on the underside of the limbs having a tendency to droop to the ground should be removed. The third season shorten in the new growth about one-third, leaving the same multiple of branches on each of the previous year's shoots as were left the year before. In after years the pruning is limited to the removal of branches which cross or interfere with each other and checking the growth of branches making an excessive growth. Young trees should always be protected with tree protectors to prevent sunburn. The fig tree is just as responsive to good care, thorough cultivation, as any other variety of fruit tree, and the bearing capabilities will be commensurate with the care bestowed on the trees while young. But very little fruit is to be expected until the trees are four years old.

RELATION OF THE SMYRNA TO THE CAPRIFIG.

As has already been explained the Smyrna or edible figs are dependent for their development on the caprifig, which is a distinct tree from the edible type of figs. Its only value lies in the fact that it serves as a home for the little wasp, *Blastophaga grossorum*. The Smyrna figs set fruit as early even as the first year and some of these fruits would mature, providing the caprifigs were old enough to produce figs containing the insect. *The first four years growth of the Smyrna and caprifigs should be devoted to securing a sturdy well-balanced tree, hence any attempt to deviate from this plan in an endeavor to secure early bearing means that the vitality of the tree will be impaired.* The caprifigs even in the second year will in some cases produce the first or Profichi crop, but as there are no succeeding crops to take care of the several generations of the insect, it has no place to deposit its

These figs remain on the trees all winter and are as firm and hard apparently as bullets. In the spring, when the new growth starts on the trees, the caprifigs commence to grow, and at the same time the wasp passes through its various stages until it reaches maturity. The female insect, which is winged, passes out of this crop from April 10 to May 1 each season and enters the Profichi crop, the gall flowers of which are then in the receptive stage to receive the eggs. It takes from six to seven weeks for the insect to pass through its several evolutions from the egg state. The wasp develops in the following manner: The male is wingless, while the female is winged. The male always emerges from the gall, first, crawling around in the caprifig, pierces the gall containing the female with its powerful mandibles and impregnates her. She then enlarges the opening made by the male, and in passing out of the fig comes in contact with the male flowers surrounding the orifice, which are then mature from June 10 to July 1, and gets her body and wings dusted with pollen. At this stage, which is readily determined by breaking open a fig, for the insects, both male and female, will be found crawling around inside, the figs are picked off and hung up in the Smyrna fig trees. A single caprifig contains from two hundred to fifteen hundred wasps. Within a very short time the workman knows by the outward appearance of the fig that it has reached the proper stage of ripeness. All succeeding crops of caprifigs, that is the Mammoni, and Mamme have very few or no male flowers, their only purpose being to perpetuate the life history of the insect. This being the case, even if a wasp should find Smyrna figs to enter, the fruits would never mature for their flowers could not be fertilized.

The male and female wasps are readily distinguished, the former being of a reddish cast, while the latter is black. The complication which many people imagine in connection with the distribution of the caprifigs seems ridiculous when it is borne in mind that the ignorant peasants do this work in Smyrna without having the slightest conception of the matter, not knowing the male from the female

insects. All they do know is, if they do not have this bug their crop is a failure. With all their ignorance, they harvest from twenty to thirty thousand tons of figs annually, and the failure of a crop is almost unknown there. Climatic conditions are not as favorable there as here, for it is often very much colder in winter. If the winds do not happen to come from the north in the summer, it remains cool, and early rains cause the crop in some seasons to be seriously damaged.

RECEPTIVE STAGE OF THE SMYRNA FIG.

The Smyrna fig is only caprifigged once in the season. On the Roeding Place this work commences about June 10 and continues until July 1. Smyrna figs are in the receptive stage when they present a glossy green appearance. At this time the figs at the largest part will measure three quarters of an inch across and the flowers will



CROSS SECTION OF CAPRIFIG SHOWING FIG WASP.

be waxy white. Fortunately all the caprifigs do not mature at the same time nor are the Smyrna figs receptive in a single day, otherwise in large holdings it would take a big force of men to carry on the work. In four to six year old trees, from six to fifteen caprifigs should be hung in each tree, but if there is a plentiful supply of infested caprifigs it will do no harm to suspend a larger number. Trees from ten to forty years old will require from twenty to fifty figs to each tree. The cost of caprifigging is a small item of expense, trees from four to eight years old will graduate from 25 to 50 cents per acre, and in older orchards the expense has never exceeded one dollar per acre.

HOW THE CAPRIFIGS ARE DISTRIBUTED.

The caprifigs are gathered in baskets, picked off where they can be readily reached from the ground, or are knocked from the tree with bamboo poles when beyond reach. This work should start at daylight while the figs are cool, for the flight of the insect commences just as soon as the individual fruits have become slightly heated by the sun's

rays, and continues with interruptions for about four hours, covering a period of six to eight days from a single fig and occurs at about the same hour each day until all the female wasps have made their escape. The men gathering the figs, dump them into a large pile in some central point in the orchard. They are then taken in hand by another crew, who string the figs on raffia fibre, using a darning needle for piercing the figs. String will serve, but raffia is much softer, cheaper and better. The figs should be pierced in the fleshy part near the stem end. The number to a string is usually ten, the first and end figs being held in place by a half hitch. After the figs are strung, they are thrown up into the trees with a dexterous twist, causing the string to wind around a branch. Whenever possible, have the string suspended in a shady spot of the tree. The work is further facilitated on the Roeding Place by hanging a wire basket in each tree.

This basket is made of $\frac{3}{4}$ inch poultry netting and large enough to hold from 12 to 15 figs. The basket is suspended by means of light copper or iron wires in a shady part of each tree.

Caprifig Trees These should be planted in a group by themselves in a protected situation in the orchard, or they can be planted around the home as shade trees, being very desirable for this purpose. The figs when they drop dry and shrivel up, and do not make a mess under the tree like the edible figs. For every twenty-five Smyrna figs plant one caprifig tree.

Supplying Insects. To all purchasers of Calimyrna Figs, we supply enough infested caprifigs for the purpose of colonizing the wasp in their caprifig trees free of charge. Application for these infested figs should be made in the latter part of March or early in April, when the figs will be forwarded by us as soon as the wasps commence to issue from the Mamme figs. Application for the wasps should not be made until the caprifig trees are four years old. The figs should be strung up in the same manner as is followed in suspending the infested figs in the Smyrna trees. Three to four figs in each tree is sufficient for colonizing the insect.

HARVESTING AND DRYING.

Unlike many other fruits, the fig in order to produce a high grade article must be allowed to remain on the tree until it loses its original form, shrivels up and drops off. Sometimes it is necessary to jar the trees slightly, if the shriveled figs do not drop, knock them off with light bamboo poles. From the orchard they are hauled to the drying ground, which should either be a hard piece of ground or an alfalfa field. Before being placed on the trays, the figs are immersed for a minute in boiling brine, in which about three ounces of salt to the gallon of water has been dissolved. A large perforated bucket is used for dipping the figs and it is raised and lowered several times during the interval of dipping. The figs are then spread on trays, not over one layer deep. The second day after exposure to the sun they should be turned. This is done by placing an empty tray over a full one and by a dextrous movement of the hands, one man standing at each end of the tray, the figs are transferred to the empty tray. The following day the trays should be stacked and the final drying takes place in the shade. The proper degree of dryness is determined by taking the figs between the fingers in the morning before they become warm and if they have a slightly leathery feeling, they are dried sufficiently. From the trays they are either dumped into sweat boxes or piled up in a closed room, where they are turned occasionally to equalize the moisture in them, and to cause them to sweat. Before taking to the packing house, they should be washed in a weak cold brine to clean them and remove any dirt which may have adhered to them while they were being dried. Before dumping in the sweat boxes again, pile them up on trays 4 to 6 inches deep for a few hours until the surplus moisture has dried off.

The time of ripening is the result of our observation in Fresno. When the first crop known as Brebas are of any value both periods of maturity are given.

THE SMYRNAS.

Calimyrna. The genuine Smyrna fig packed under the name of "Erbeyli" (signifying fine fig) in Asia Minor, and known in Turkish as "Lop," and in Greek as "Lopia." Large to very large; turbinate, pyriform; very short, stalk short; ribs distinct, orifice large, of pale ochre color and widely open when the fig is mature and before shriveling; skin lemon-yellow; pulp reddish-amber, sometimes pale amber, turning to dark amber just before falling; seeds large, yellow, fertile, overspread with a clear, white syrup, giving the fruit a richness and meatiness unsurpassed by any other fig. Tree of spreading habit, leaves medium to large and five lobed. The dried figs contain 64 per cent sugar, which is $1\frac{1}{2}$ per cent more sugar than found in the imported Smyrna Fig. Dries readily and with less trouble and expense than any other fig, dropping to the ground of its own accord, being practically dry when it falls and requiring when placed on trays, only from two to three days exposure to the sun. *This is the world-famous fig of commerce.* August to October.

Baradjic. Derives its name from its close resemblance to the form of a water jug used by the people of Smyrna. Very large, obovate, acute pyriform; neck long; stalk long; skin very thin, greyish-green, ribs distinct, light grey, sprinkled with small dots of the same color; orifice deep red; pulp rich, deep crimson; seeds fertile and numerous. Tree a compact grower and of very spreading habit; leaves large and usually five lobed. A magnificent table fig and the largest of the Smyrna class. August and September.

Black or Purple Smyrna. Small, globular, stems short; no neck; skin very thin, purplish, with prominent light greyish ribs, sprinkled with round brownish dots; pulp dark amber; a most delicious fig to be eaten out of the hand. Dries well, but too small for commercial purposes. Tree a dense compact grower, giving a shade as dense as the Texas Umbrella; leaves small, five lobed, slightly serrated. August 15 to September 15.

Black or Purple Bulletin Smyrna. Fruit large to very large, obtuse pyriform, neck short, stalk long; skin light purple, streaked and ribbed with grey and sprinkled with small brown dots; pulp reddish-pink, very rich and luscious; seeds large and usually fertile; orifice open when mature and very small. A superb fruit, both in the fresh and dried state. Late August.

Checker Injir. Signifying "Sugar Fig," and grown in the Island Seios. Tree a very strong grower, branches heavy and closely jointed; of upright growth; leaves very large, deeply lobed and slightly serrated; fruit roundish, oblate, short neck; pulp reddish-pink, seeds small, fertile; skin greenish-yellow, very thin; ribs distinct, light green. Dries well. Late August.

Kassaba. Medium to large, almost globular, somewhat flattened at apex; short neck and stalk; orifice decidedly large and open; skin pale green; pulp reddish pink in the fresh state; the sugar content being higher than in any other variety. Makes a superb dried fig. Tree a beautiful upright grower, without question the handsomest of the Smyrna varieties. September.

THE WILD OR CAPRIFIGS.

These are readily distinguished from the foregoing by their slender branches and radically different habits of growth. This is a very extensive group, covering a wide range of territory and embracing a great many species and varieties. Our present collection comprises twenty varieties, but having found that the following meet all the conditions for perfecting the Smyrna Figs, we do not list them, feeling that their particular values had best be determined before offering them for sale. *Must be grown in connection with every Smyrna fig orchard.*

Roeding's Capri No. 1. A very rapid, vigorous grower of spreading habit and with very large leaves. Produces an abundance of all crops; Profichi, Mammoni and Mamme,

and matures its first Profichi June 12. Particularly valuable on account of its producing all the crops necessary for successfully carrying through all the generations of the Blastophaga.

Roeding's Capri No. 2. A very upright grower, branches very slender; leaves small. Produces an abundance of the Profichi crop, maturing somewhat later than the foregoing, the first figs ripening June 16, in which its value principally lies, as it lengthens the season of caprification of the Smyrna Figs.

Roeding's Capri No. 3. A decidedly distinct variety, branches much heavier and more closely jointed, than Nos. 1 and 2; leaves small and serrated. Figs of the Profichi crop very large, heavily ribbed and developing a larger number of galls with insects than either of the other two varieties, the first figs ripening June 8. A rather uncertain bearer of the other crops.

Capri Magnissalis. By far the largest caprifi in our collection. Introduced by Mr. Geo. C. Roeding who mailed buds of this variety from Aidin where he discovered it in June, 1901. Figs of the Profichi crop 3 inches long by 2 inches cross diameters. Figs commence to ripen shortly after the Profichi of Roeding's Capri No. 1. From 1500 to 2000 insects will issue from a single fig, and as the male flowers are always abundantly supplied with pollen, never turning black and rotting, a bad fault in some of the Italian types of caprifigs and seedling Smyrna caprifigs; it is well worthy of a trial. As none of the Caprifigs are named in Smyrna, we have named it after Mr. S. G. Magnissalis, who extended so many courtesies to Mr. Roeding on his visit to Aidin, Asia Minor. Our stock of trees is limited.

THE ADRIATICS.

Agen. Fruit medium; roundish; skin green with brownish tinge; flesh dark blood red color; delicious. September.

Angelique. Medium; pyriform; skin whitish-yellow, pulp red; of good quality when mature. August.

Bellona. A fine French fig, fruit large, pyriform; dark purple; flesh red; leaves dark green, very glossy; fine flavor when dried. Late August.

Bourjassote Panache. The most ornamental of all fig trees; upright grower; branches beautifully marked with green and yellow stripes; fruit medium, pyriform, exquisitely marked with green and yellow stripes; pulp sweet. Early August.

Brown Ischia. A small, brown fig, pyriform, when fully ripe of a deep brownish-red color; tree especially valuable as a shade tree, its crown forming a fine umbrella, with densest shade; as a fruit tree alone it has many superiors. Middle of August.

Brown Turkey. This is a very large fig; color violet-brown; the earliest large fig in the San Francisco market. Late June and early August.

Cargigna. Fruit medium; light yellow; flesh deep red; a most delicious table fig. June and August.

Cernica. Fruit medium, ovate; skin deep purple, dotted with white specks; flesh deep carnation red; tree of drooping habit and rapid grower. September and October.

Grise. Fruit medium, oblong; no neck; skin light blue, very thin; pulp of a rose color; sweet, rich and delicious; an excellent fig for the table; tree a strong grower and very prolific. Early August.

Mission. (*California Black*). The large black fig most common in California. It is a great grower, heavy producer and stands in the lead of all black figs for shipping and drying. Late June and August.

Moissonne. A medium-sized fig, turbinate, stem long; dark purple, covered with blue bloom; pulp coarse, but sweet. August.



CALIMYRNA (GENUINE SMYRNA) FIGS, NATURAL SIZE, GROWN ON THE ROEDING PLACE

Rose Blanche. Fruit medium; oblate; skin exceedingly thin, deep purple; pulp deep red; valuable for the table or drying. Early August.

San Pedro Black. Very large, elongated, ovate, no stalk; skin smooth, violet black with green neck; pulp red, coppery tinted violet. One of the largest of figs; excellent for table use. Early in August.

San Pedro White. (*Fico de San Pietro*). "Apple Fig." The largest and handsomest early fig in existence, with excellent flavor and sweetness; skin golden-yellow, shaded green; very palatable. The second crop drop off unless caprified. Middle of June and late August.

Verdal Longue. (*Sultana, Verdal Honde*). Fruit large, turbinate; skin green when ripe; pulp of a carnation-red color; very rich, sweet and aromatic; tree a peculiar grower, branches all drooping downward, and almost touching the ground. A most delicious, and highly flavored fig. September and October.

White Adriatic. Introduced from Sicily and has been more extensively planted than any other variety for drying purposes. Fruit large, skin greenish-yellow color; pulp carnation-red. Will undoubtedly be displaced by the Smyrna class of figs on account of its very inferior flavor and inclination to sour on the tree wherever planted. Second week in August.

White Celeste. A very small fig of amber color; fine for preserves and crystallizing. Early August.

White Endich. A medium sized white fig; skin thin, golden-yellow when fully ripe; pulp white, slightly tinged with rose towards the center. Tree a rapid grower and an enormous bearer. Valuable for drying, canning and pickling. First week in August.

Zimitzia. Fruit large; pyriform, skin very thin; greenish-yellow; pulp deep red, sweet and delicious; tree a very rapid, spreading grower; leaves deeply lobed. August and September.

THE OLIVE.

THE Olive has long been a recognized fruit in countries where the Latin races predominate, and especially is this true of the South American Republics, Old Mexico, and it will no doubt find conditions favorable to it in Australia. Its requirements of soil and climate are such as to commend it for planting on the higher plateaus and foothills and in the mountain valleys of nearly all tropical countries, and particularly those aligning the Pacific Coast to the south, where there is a great similarity of climate and soils to those prevailing in California and the Mediterranean region, the recognized home of this fruit, and where it has attained its widest economic importance. In California the olive has long since passed the experimental stage, and is now produced in quantities, both for its oil, as well as for pickling. That it is destined to occupy a position of equal importance in the horticultural development of California that it does in Latin America has long been admitted by students. It is necessary to have a mean average of 57 degrees Fahrenheit and at no time must the temperature go below 16 degrees above zero to carry on the culture of the Olive with any degree of success.

Unlike all other fruits having their origin in the old world no attempt has been made by growers to adopt the trade names of Europe in marketing their product. This creditable independence of the growers is being recognized throughout the United States by consumers, and California olive oil combined with the name of an established firm, is synonymous for the purity and high grade of the product. Our growers were the first to demonstrate the practicability of pickling olives when fully ripe and by canning or bottling them, preserving them for an indefinite length of time. The ripe olives with all their cells filled with oil are a delicious, healthful food and are so delectable that they appeal to the most fastidious persons as a high grade article.

Another important branch of the business is the pickling of green olives, and although they lack the nutritious elements of the ripe olive, they are nevertheless appreciated as a relish. The United States imports annually about \$1,000,000 worth of green olives from Spain. In recent years local concerns have learned the method of curing green olives, and their product bears so close a resemblance to the imported that even experts find it difficult to detect a difference. Insect pests and the lack of knowledge in holding them in check in the Old World, are seriously affecting the output of both oil and pickles so that the future of the industry, of which California is destined to hold control, is assured.

PLANTING AND PRUNING.

In filling orders for olive trees, we make it an invariable rule to cut all trees down to either three or four feet according to the age of the tree and shorten all side branches to six inches. If this work is neglected when the trees are dug, they will invariably die. Great care should be exercised by the orchardist not to expose the roots of the olive and in moving trees from one place to another, the roots should be wrapped in a damp sack.

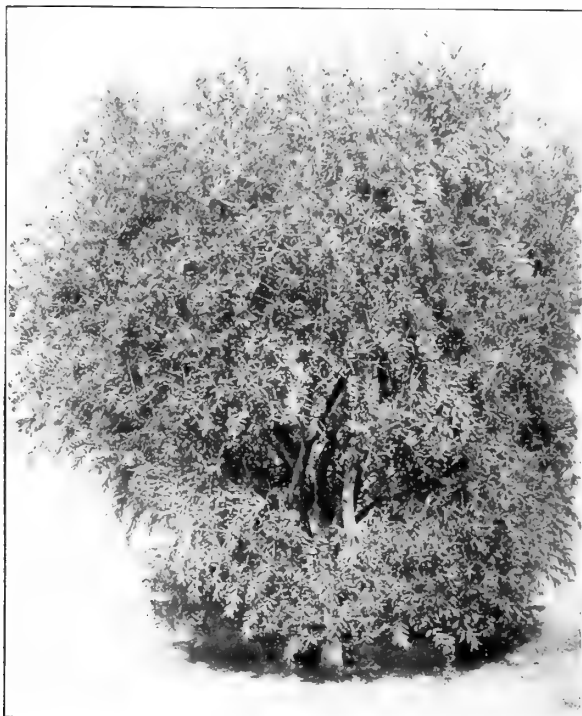
Before planting all bruised and damaged roots should be cut off and the remainder trimmed slightly in order to have a fresh clean cut for the new roots to start from. Trees should be planted from two to three inches deeper than they stood in the nursery rows and should be cut back to twenty-four inches from the ground and all lateral branches shortened to four inches. The first winter after planting the branches forming the head of the tree should be cut back one-half; leaving not more than five to form the head of the tree.

The second winter cut away all but one shoot on each of the framework branches. This should have an upward tendency in its growth and should be cut back at least one-half. In the third winter the thinning and cutting back of the new growth should not be neglected, but the shortening in of the lateral branches should not be so severe as in the first two seasons. The pruning of the olive for the first five years of its existence should be carried out with a view of acquiring a vase shaped tree. This method if carefully followed will develop not only strong, well braced and sturdy branches, capable of supporting an enormous crop without resorting to artificial means to prevent the branches from breaking, but will also insure regular bearing.

In addition to having a well balanced tree, the constant and systematic pruning causes a large number of fruit bearing branchlets to grow, and a well shaped tree will have an enormous bearing surface, with the fruit not confined to any particular part but hanging from the spreading branches close to the ground as well as those at the top. Pruning should be carried on every year for it maintains a well-balanced head, promotes the growth of young wood and facilitates the gathering of the crop by holding the rampant branches in check, which would otherwise destroy the symmetry of the tree. Unpruned trees send up a tangled mass of growth which in ten years (when the tree should be in its prime) degenerate into a lot of ugly bare stems with only a few fruit bearing branches at the top.

Trees should never be planted in sections subjected to cold and severe winds during the blooming period, which takes place the first week in May. The best conditions have been found in the San Joaquin and Sacramento Valleys, in the coast counties slightly inland and in the lower

foothills of the Sierra Nevada mountains, where water for irrigation is obtainable. Olives are also a pronounced feature of the landscape in all the Southern counties of the state and in sections of Arizona. It is a great mistake to plant olives on poor, rocky soils. Ample rainfall, irrigation and thorough cultivation are necessary for the profitable production of good olives. Nearly all the varieties enumerated by us have borne fruit, and our remarks in reference to them are verified in many instances by actual tests made by us.



WELL PRUNED OLIVE TREE.

Ascolano. *Italian.* Fruit large, comes into bearing early. Among the best of the Italian varieties for pickling. First of November.

Atroviolacea. *French.* Olives of medium size, and when fully ripe of a deep jet black color. A good oil variety, rather small for pickling. Said to be an excellent olive dried. Late October.

Corregiolo. *Italian.* Makes a very high grade of oil and highly esteemed by Mr. E. E. Goodrich of the El Quinto Olive Farm, Santa Clara. November.

Cucco. *Italian.* A large olive, valuable for pickling. Late October.

Lucques. *French.* Tree a strong, upright grower, fruit varying from medium to large and of a peculiar crescent shape, the pit being similarly formed. When fully ripe, the fruit is of a shining bluish color. Makes a very good quality of oil and prized very highly as a green pickle, being known to the trade as the "Crescent Olive." Requires very careful manipulation. Middle of October.

Manzanillo. *Spanish.* Introduced by Prof. Pohndorff from Spain, of whom we obtained the first truncheons. Among the olives of Southern Spain, especially around Seville, the Manzanillo is highly prized both for pickling and oil; the fruit is very large, of a deep black color dotted with white specks when fully ripe; the tree is a straggling weeping grower. One of the best olives for this valley, very hardy and a prolific and regular bearer. Makes fine green and ripe pickles of the very best quality, and produces oil of a very high grade. First week of October. See front cover for illustration in natural colors.

Manzanillo No. 2. *Spanish.* This is an entirely distinct variety from the preceding; was received at the same time. Tree is a rapid grower, branches shooting upright and forming a very dense compact head. Fruit quite large, oval in form, with a very distinct tit at the end. Valuable for green pickles. Very rich in oil; late. Middle of November.

Mission. *Spanish.* This old standard sort, introduced by the Spanish padres, is probably more extensively cultivated than any other variety. Fruit medium to large, and makes an excellent pickle, either green or ripe, as well as a superior oil. The tree is a handsome, rapid, upright grower, and as an avenue tree, surpasses all other varieties. Adapts itself to a wide range of locations and is a regular and almost constant bearer. Late October.

Nevadillo Blanco. *Spanish.* This is the olive generally grown in the south of Spain, producing the finest oil of commerce. Fruit medium, deep black; tree the most rapid grower of all; branches weeping; grows well on the coast and interior; yields an abundant supply of oil of the very best grade, and makes a moderate sized pickle of superior flavor. Late September.

Obliza. *Dalmatian.* This is an exceedingly large olive, oval, but broad and rounded at both ends; borne in clusters on the stems. The tree is a good grower; the branches are somewhat inclined to droop; the foliage is large, thick and of a deep dark green color; very hardy and productive, and worthy of extensive cultivation. Excellent for pickles, and will find a ready sale in this shape, the fruit presenting a very fine appearance. Middle of October.

Pendulina. *French.* The tree is a strong, upright symmetrical grower; the fruit grows in clusters and produces a high grade of oil; lacking firmness, is undesirable for pickling. Last of November.

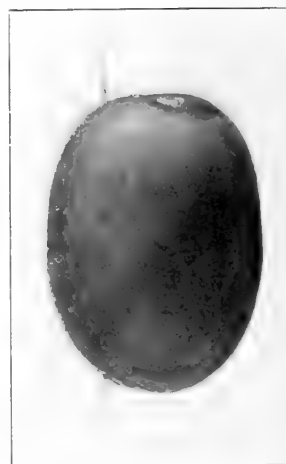
Picholin de "St. Chamas." *French.* The trees of this variety require good soil, and amply reward with heavy crops all extra care. The fruit is oblong and reddish-black when ripe. Pickled green, it is a leading article of commerce in the neighborhood of St. Chamas, France. Possesses a very delicate flavor and said to be one of the best. Middle of October.

Razzo. *Italian.* An olive from the Lucca district; oval, medium size or below; it yields in its native country the finest grade of oil. Last of November.

Rubra. *French.* The tree is a very vigorous, upright grower, succeeds in dry hilly soils, almost unfit for the growth of any tree. The fruit is best suited for oil; gives an oil of the very highest grade. Fruit medium size, bears heavy and regular crops. Early November.

Sevillano. *Spanish.* The tree is a strong grower and very ornamental. Leaves very long and slender, dark green above and grayish white on the under side. The largest of olives, and the variety exported from Spain under the name of "Queen Olive." When ripe of a bluish-black color; flesh adheres to the pit. A regular bearer. Only fit for green pickles; ripens early; its large size and earliness is sure to cause it to be in demand. Early October. See front cover for illustration in natural colors.

Uvaria. *French.* A valuable olive for oil. Grows on rich and poor soil and its production is good on either. The fruit is of medium size, borne in clusters resembling grapes; when fully ripe it is of a dark bluish black color. Middle of October.



ASCOLANO OLIVE.

CITRUS FRUITS.

THE ORANGE.

THOUGH taking its inception in the warm belt of the Southern counties of the State, citrus culture has gradually found its way farther north, until at the present writing, oranges and lemons are grown within the very shadow of Mount Shasta; in Arizona—notably the Salt River Valley—and in many portions of Old Mexico. The sheltered nooks and interior valleys of the Sierras, the thermal belts in Placer, Kern and Tulare counties, the regions free from biting frosts in the great valleys of the San Joaquin and Sacramento, all furnish conditions of soils and climates in which the orange and the lemon luxuriate.

That citrus culture is one of the great and growing industries of California can no longer be questioned when it is borne in mind that the shipments are \$20,000,000.00 and over annually. These figures indicate the magnitude of the industry and present evidence of its substantial character and opportunity for its future development.

Citrus trees are either dug with a ball of earth varying in weight from 35 to 50 pounds, or they are taken up with naked roots. The former method is usually followed in handling trees in California. Freight charges on stock handled in this manner are heavy, still the satisfaction of knowing that with ordinary care every tree will grow, offsets the slight additional expense incurred in transportation charges. Trees taken up in this way can if necessary be kept in a shed for several months before planting, if the balls of earth are watered occasionally. In taking up trees with naked roots the greatest care should be exercised on the part of the orchardist to avoid exposure. When set, the leaves should be stripped off to retard evaporation and loss of sap in consequence. In planting set the trees so that when the soil is settled the union of the bud with the stock will be at least a couple of inches above the ground.

Be sure to settle the earth around the trees with water, whether planted with naked roots or balled. In filling in the hole around a balled tree, never tramp on the top of the ball as it will break it, dislodge the fibrous roots and in many instances cause it to die. After the hole, in which a balled tree is planted, is partially filled, cut the cords by which the burlap is tied to the tree; the burlap need not necessarily be removed as it will soon rot.

Seedling trees should be planted not closer than 30 feet on the square method; budded trees from 22 to 24 feet, with the exception of such varieties as Satsumas, Limes and Kumquats, which are of a dwarfish habit, and should be planted from 12 to 15 feet apart.

Our citrus trees are headed about 26 inches from the ground, hence all that is necessary in planting is to shorten the branches forming the head to eight inches. Trees headed at four feet or more should be cut back to 28 inches for the purpose of forming a new head. High headed trees are always objectionable, for they not only expose much of the stem causing sunburn, but in addition to this the tree is retarded in acquiring a sturdy compact growth. In pruning, above all things do not be deceived into the idea that the trees must be thinned out to admit air and sun. The tendency of nearly all the budded varieties is to droop, so in shaping the tree cut to a lateral which has an upward tendency. For the first four years, except to check the growth of rampant and interfering branches for the purpose of securing a well rounded symmetrical head, little or no pruning is necessary. As the tree develops, dead branches and those which are no longer

fruit producing should be removed annually. A well pruned orange tree should present a compact mass of foliage with none of the branches exposed to view. Never neglect to protect the stems of young trees. Wrap with burlap, paper or tules, but the best and most serviceable tree protector is one made of yucca fibre. This allows the free circulation of air around the stem of the tree. The protection of the stem prevents the development of suckers and obviates the danger from sunburn, while the top growth is stimulated.

In most localities during the summer months citrus trees must be irrigated every three or four weeks. In heavy adobe soils every precaution should be taken not to allow the water used in irrigating to touch the stem as it will cause gum disease.

For many years we have realized that citrus, culture already one of the great and thriving industries of California, must in the natural course of events, find a field for successful prosecution not only in many of the recent acquisitions and dependencies of the United States, but also in many other countries with tropical and semi-tropical climates. With these conditions before us, the necessity of growing our own trees became so pronounced that the Roeding and Wood Nursery Company was incorporated, which firm is an integral part of the Fancher Creek Nurseries.

All of our stock is grown in Exeter, along the foothills, the great thermal belt of Tulare County. The trees are planted in a heavy, black loam permitting the taking up of balled stock in first class shape. No fertilizer is used and in consequence of this, our trees when the planting season arrives, are sturdy, well matured—are in fact, perfect specimens. The iron in the soil gives the foliage a deep, lustrous green, healthy color, and this in itself makes the stock attractive to dealer and planter alike.

In order to meet soil and climatic conditions in different sections, we bud our citrus trees on the following stocks: Sweet Orange, (*Citrus Aurantium Dulcis*), Sour Orange, (*Citrus Aurantium Amara*) and Deciduous Orange (*Citrus Trifoliata*). On the first named sort the budded trees outgrow those on any other root, and practically all the old groves of the State are worked on this stock and are thrifty and healthy, except when situated on soils where there is an excess of moisture during certain seasons. Sweet orange seedlings are grown from the seed of the common sweet seedling orange. Sour Orange seedlings are grown from the seed of the sour orange so extensively grown in Florida as a seedling for budding practically all types of citrus trees. Although the buds do not grow as rapidly or attain as large a size in mature trees, this stock is very resistant to gum disease, hence it has been much in demand in recent years for heavy soils where water was apt to stand for any length of time either because of summer irrigation or a heavy rainfall in the winter months. The *Citrus Trifoliata* is a native of Japan and is the hardiest orange known. It is deciduous, its fruits are very bitter and of no commercial value, but its hardness seems to exercise a decided influence on the budded tree. It is said to be more resistant to cold than any other stock. It is also much prized as a hedge plant making an impenetrable barrier to man and beast. An erroneous impression has often been created in the minds of some people that because it is extensively used as a stock for trees grown in pots and tubs. (for which it is particularly adapted), it dwarfs trees when planted in orchard form. Actual tests have proven this is to be a mistake.

NEW VARIETIES.

Golden Nugget Navel. Originated by R. M. Teague of San Dimas, California. Tree a vigorous grower of good habit, thornless; foliage dark green, abundant lateral or fruiting branches, and very symmetrical, easily distinguished in a grove of other varieties. The tree presents a rather umbrageous appearance due to the slender willowy growth of the younger branches. The fruit is of a deep golden color, very smooth, solid and thin skinned, the exterior being strongly suggestive of kid gloves to the touch so smooth and even is the surface; shape rather oblong, good size; pulp is deliciously sweet, free from rag and is seedless. November to March.

Navelencia. This new sort is commanding some attention from growers. Said to be a cross between the Thomson's Improved Navel and the Valencia Late, it possesses all the good qualities of its parents, and ripens fully 60 days later than the Washington Navel, thus extending the season for marketing Navels until the early summer months. In character of growth and in the fine texture of the fruit it is said to resemble other navels; it is seedless. Worth of trial. April to June.

GENERAL COLLECTION.

Joppa. Introduced from Joppa, Palestine. Fruit large and of red orange color, nearly seedless; thin rind; pulp very fine, sweet and juicy; tree thornless, upright grower. Its remarkable characteristic is that it can be left on the tree as late as July and still retain all the features of a first-class shipper. April to July.

King. Introduced from Siam. Fruit very large; very rough rind, which adheres loosely like all Mandarin types; fruit much flattened, color orange red; pulp juicy, meaty with a peculiar attractive aromatic flavor of the very best quality. Tree upright, vigorous grower and quite thorny with rich, dark foliage. June to August.

Kumquat. A small species much cultivated in China and Japan and known there as Kin-Kan, which means gold orange. Kumquat is Chinese for the same meaning. The fruit is about the size of a very large gooseberry, but decidedly more oval in form; rind sweet; juice acid, very delicious and refreshing. The sweet rind and the agreeable acid pulp make a piquant combination relished by most palates. Preserved in sugar by the Chinese and largely used as a sweetmeat. Tree of dwarf habit and very desirable for pot and garden culture, being both profitable and ornamental. May to July.

Mediterranean Sweet. Fruit medium to large; pulp solid and few seeds; ripens late. Tree is thornless and very productive; very widely distributed and popular. February.

Ruby Blood. Fruit medium, nearly round, skin very smooth and thin; pulp rich, juicy and melting. When the fruit is ripe, it is streaked and mottled throughout with blood red so intensely that at times it penetrates through the skin; much superior to the Maltese Blood. Tree a strong vigorous grower and thornless; a regular and heavy bearer. January to April.

Satsuma. (*Unshu, Oonshu*). Introduced from Japan. Tree of dwarfish habit, quite thornless and bears when very young. The first orange to ripen its fruit. Very hardy, which in connection with its earliness makes it

an invaluable sort. Skin thin, deep yellow; flesh very tender, juicy, sweet, delicious, entirely seedless. October to December.

St. Michael. Small, round, firm, thin skin, pulp juicy and very sweet; tree dwarfish habit; a good bearer; very desirable variety. February.

Tangerine. (*Dancy's*). Fruit of medium size, of the Mandarin type. The pulp is very sweet; rind thin and separating readily. March.

Thomson's Improved Navel. Originated by A. C. Thomson, of Duarte. Fruit of medium size, rind very smooth and thin; pulp juicy, sweet and of firm texture. Its earliness combined with the smoothness and thin-skinned rind have given this variety in many localities a precedence over the Washington Navel. November to January.

Valencia Late. Fruit oblong, large, resembles Paper Rind St. Michael in color and firmness; ripens very late, reaching the market when all other varieties are gone. A valuable variety and only second to the Washington Navel in the extent of its dissemination. In localities not subject to late frosts it should be extensively planted. Will hold its fruit in good condition as late as September.

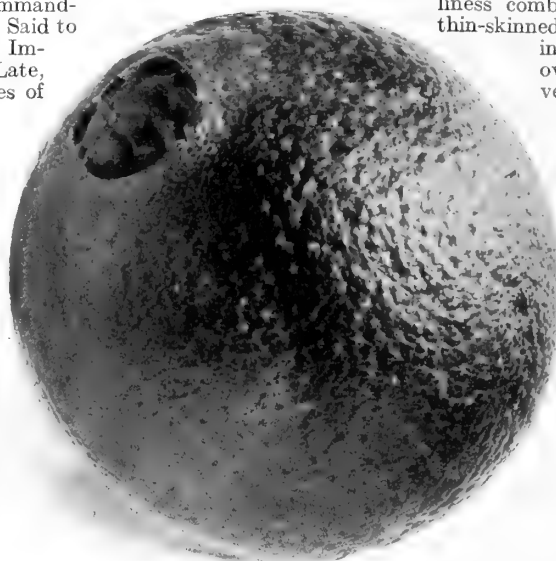
Washington Navel. Of all foreign varieties introduced, none have given California the prominence and prestige as a great citrus section that this remarkable variety has. It derives its name from the peculiar umbilical formation on the

summit or blossom end of the fruit. In California it has reached its highest stage of perfection, and stands in the lead of all other varieties for its large size, lusciousness and sweetness of pulp, so that it well deserves the title of "King of Oranges." Tree is a rapid grower and an early and prolific cropper. Fruit juicy, melting, seedless. November to March.

Willow-Leaved Mandarin. Tree a very compact grower, and desirable for ornament. Fruit medium size, flattened, deep yellow; skin thin; segments loosely adherent; flesh dark orange yellow, spicy and aromatic. December to February.

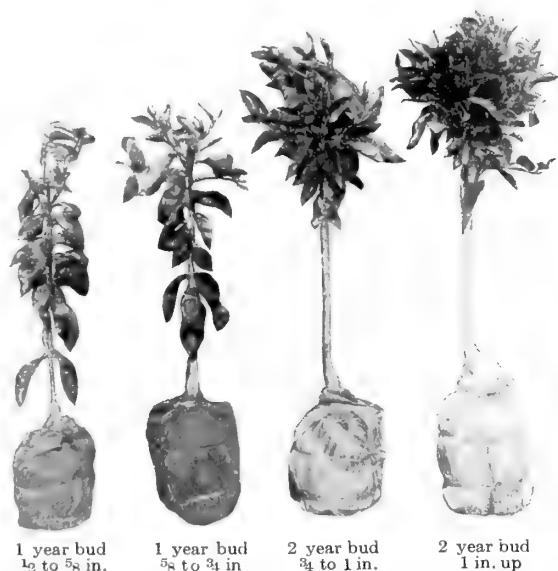
THE LEMON.

It is generally understood that the lemon will not stand as low a temperature as the orange, hence its planting for commercial purposes is restricted to localities where the temperature during the winter months does not go lower than 24 degrees Fahrenheit above zero. The tree is a strong upright grower and the branches must be held in check by systematic annual pruning, which causes a liberal development of lateral branches and keeps the tree in a low symmetrical form, thus facilitating the gathering of the crop. Fruit should be picked as soon as it has attained its size and just before turning. For home use, each fruit should be wrapped and placed in a box in a cool place. After a few months the lemon will have become quite yellow in color with thin skin and will be full of juice. Lemons allowed to ripen on the tree are thick skinned, deficient in juice, develop extreme bitterness and are in every way inferior. For commercial purposes lemons are cured before shipping in specially designed houses.



THE WASHINGTON NAVEL.

In localities where the conditions are congenial for its perfect development, flowers, immature and mature fruit ready to pick will be found on the same tree. A few trees are always a desirable addition to the wants of every home, and by taking the precaution to plant in a protected spot, a good supply of fruit is always available. The tree is a very prolific bearer. Any soil in which the orange thrives is well adapted to the lemon.



CITRUS TREES BALLED.

Eureka. A California seedling and the recognized commercial variety in this State. Tree a vigorous grower, practically thornless and a prolific bearer. Fruit medium size, sweet, smooth, glossy rind, an excellent keeper, abundant acid and very little rag. Its great popularity in the lemon sections is due to its continuous blooming and setting of lemons all the year, and particularly for its heavy summer crop, when lemons are in greatest demand.

Lisbon. Imported from Portugal. Medium size; sweet rind and very strong acid, few seeds, an excellent keeper; fruit very uniform; tree a strong grower, with compact foliage, a prolific bearer; quite thorny, but the thorns decrease as the tree grows older. Quite hardy and very popular in the interior.

Villa Franca. A fine variety and desirable for commercial planting. Fruit oblong; rind thin, without any trace of bitterness; pulp acid, juicy, nearly seedless; tree thornless, spreading habit; will stand a lower temperature than any other variety.

THE POMELO.

Known as Grape Fruit, because much resembling in appearance a bunch of grapes; fruit borne in immense clusters from 3 to 15 fruits in a bunch, hence the name. Fruit much sought after for its medicinal qualities, especially by people suffering from dyspepsia and other stomach troubles. As a healthy breakfast relish it excels every other fruit. As its valuable properties are becoming appreciated the demand for it is increasing. Fruit round, somewhat larger than a Washington Navel, of a pure lemon color, with white flesh of a delightful aromatic-acid flavor. In the better varieties the pulp is almost wholly free from seeds and "rag." The Pomelo commands

good prices in the eastern markets, the supply at present being insufficient to meet the demand. Tree hardy as the orange and should be handled in the same manner, except that being a more thrifty grower trees should never be set closer than 24 feet. A fashionable breakfast or luncheon fruit usually eaten before the more substantial viands are partaken of.

Marsh's Seedless. This Pomelo is deserving of more attention than it has been receiving. It has so many points in its favor over other varieties, that it stands in the same relation to the ordinary Pomeles, that the Washington Navel oranges do to the general run of oranges. Size medium, skin very smooth, glossy lemon yellow color, pulp juicy with very little rag. With the absence of seeds or nearly so, one of the principal objections to serving Pomeles is removed. The fruit will hang on the trees until late in September retaining all of its juices and piquant, aromatic flavor, without any sign of deterioration. This is largely due to its having no seeds which would germinate if kept until late in the season. Of all the citrus family, no tree is so showy as the Pomelo with its immense clusters of yellow globes set off with a back-ground of deep dark green foliage. Can be eaten out of the hand with relish without the addition of sugar late in the season.

Triumph. Medium size; peel smooth, clear, thin and fine grained; less "rag" than in most Pomeles and fewer seeds; very heavy, juicy and well flavored. No bitter in the juice, flesh nor membrane surrounding the cells and dividing the segments, and very little in the white inner lining of the peel. Tree bears young; one of the best of the imported varieties.

THE CITRON.

The culture of this fruit is still in its infancy. The experimental work thus far has been so highly satisfactory to the growers that large plantations will no doubt soon be established.

The tree is even more tender than the lemon, and should therefore be planted where there is very little danger from damage by frost.

The fruit is prepared for use by immersing in a brine for several months and after washing it is placed in a hot syrup, remaining for three weeks. Later it is cooked with crystalized sugar dissolved in water, being cooked and cooled alternately until it has taken in sufficient sugar, when it is ready for market.

Citron of Commerce. Fruit large, weighing from three to five pounds; shaped like a lemon; skin bright yellow, smooth and very glossy. The tree is of a dwarf habit, with large glossy leaves and very ornamental.

THE LIME.

More of a bush than a tree and frequently grown in hedge form. Being subject to injury from frost, it should only be planted in localities where severe frosts are a remote possibility. The trees are tremendous bearers, producing heavily the third year.

Bearss Seedless. Fruit large, more than twice the size of the Mexican and seedless, very juicy with pronounced acidity. Quite hardy, enormously productive, fruits mature all the year around. Pronounced by experts to be one of the best in cultivation. More of a tree than a shrub.

Mexican. Very largely grown in California and equal to the imported Mexican. Is much used for hedges, for which purpose it is well adapted.

Tahiti. A strong grower; fruit much larger than the former, but coarse and of inferior quality.

THE PERSIMMON.

In this country there are but two varieties in cultivation, viz., the American and Japanese. The latter on account of their attractive appearance and large size are destined to be universally planted as soon as their commercial importance is more appreciated. The impression that the fruits must be on the verge of decay before they can be eaten, has militated against their sale. There is much variation in the character of the fruit. Some varieties are not astringent at all and are edible in early autumn, while still hard and green. Several kinds never soften at all till they decay, others are edible only when fully ripe and soft; still others lose their astringency only after they have been dried, and some so abound in tannin that their juice, when expressed, makes a valuable varnish for preservation of all kinds of wood work. There is quite a distinction between the dark and light fleshed varieties. The former invariably contain seeds, are crisp and meaty, and are edible before they soften, although their flavor is improved considerably when they reach this stage; the light fleshed kinds are seedless (or mostly so) and can not be eaten until they soften, unless treated by the following process, when they can after removing the skin be eaten out of the hand like an apple:

The astringency which is so marked in the persimmon, is readily removed by placing the fruit in regular rows in Japanese tubs, from which Saki (Rice-beer) has been recently withdrawn. After the persimmons are placed in the tub, close carefully to exclude the air. In ten days the persimmons, although perfectly firm, will have lost all their bitterness, and will keep in this condition for several months to be eaten out of the hand like an apple. In Japan where the growing of persimmons is of great commercial importance, this method of handling is generally practiced. The trees are quite hardy and fruit freely in all sections of the Coast and in the Southern States, and as far north as Washington, D. C.

After the head of the tree is established, follow the same method of pruning as is recommended for peach trees for the first three seasons. Very little cutting is necessary in after years. Careful observations of the best Japanese varieties in the interior valleys have fully established the fact of their never failing to bear heavy crops every season. The tree with its large glossy leaves during the summer months, and its immense, highly colored fruit, clinging to the twigs after the leaves have fallen, makes it a striking object in the orchard or in large gardens. The varieties enumerated below have all been tested and found meritorious both as to yield and quality of fruit.

American. Fruit medium to small, cannot be eaten except when frosted, well known in the Southern and Eastern States.

Dai-Dai-Maru. Fruit very large, round, oblate, somewhat flattened, color light yellow, deepened slightly at the apex; flesh delicious, firm, juicy, very good; seeds generally absent.

Hachiya. Fruit very large, oblong, conical pointed toward the apex; skin bright red with occasional dark spots or blotches, near the apex; flesh deep yellow, soft and jelly-like when ripe; seeds usually absent; a valuable variety, considered to be one of the best. Dried

quite extensively in its native home, Japan. One of the earliest. October.

Hyakume. The name means "Hundred Momme," a weight equal to four-fifths of a pound and referring to its size; fruit very large, slightly oblate; skin orange yellow; flesh rusty brown, with many purple or dark spots, and but few seeds; ripens early, juicy and not astringent even when hard. October.

Italian. Fine tree of medium growth; small but very delicious fruit. November.

Tane=Nashi. Exceedingly large, broadly oblong, pointed; skin light yellow, changing to bright red at full maturity; flesh yellow, seedless; quality very fine; must be fully ripened before eating; tree a vigorous grower, a pro-



TANE-NASHI PERSIMMON.

lific bearer. A valuable market variety, and on account of its size, and earliness one of the best for drying. Middle of September.

Tsuro=no-ko. Fruit medium, oblong, slender, pointed; skin bright orange red; flesh orange yellow, rusty, thickly spotted with purplish-black dots; seeds long and pointed; ripens very early and like all the rusty flesh persimmons is much sweeter and juicier than the seedless yellow fleshed varieties. November.

Yemon. Fruit is large, oblate, tomato shaped, more or less square in outline, folded at apex; skin light yellow, changing to dull red; flesh deep yellow, seedless or nearly so; quality firm, one of the best; ripens in October, but it improves by keeping until very soft; when fully ripened, one of the most delicious persimmons extant. November

THE POMEGRANATE.

Well known and highly appreciated for its showy habit, ich-colored red flowers, peculiar fruit and medicinal astringency. According to Muspratt, the bark contains 32 per cent tannin, and is used for dyeing Morocco leather yellow. On this Coast it has not commanded the atten-

tion from planters that its beauty of bloom and foliage and its edible and peculiarly formed fruits entitle it to. This, however, is in measure due to the fact that the varieties which have been somewhat extensively propagated hereabouts are of little value, and not to be compared with the tested sorts that are now offered. The tree needs an abundance of water and does best on a rich, moist soil; it thrives well on lands strongly impregnated with alkali. It should be grown as a bush rather than as a tree, and bears indifferently if pruned heavily. The fruit of young plants is apt to be inferior, but size, shape and quality are improved as the plant becomes mature and in full bearing. There is a growing demand for choice pomegranates in the leading eastern markets, where they usually command fancy prices. We are now offering the following tested varieties, which have fruited satisfactorily in California:

✓ **Papershell.** Fruit very large, as large as the largest apple; eye very small; skin thin, pale yellow with crimson cheek; juice cells surrounding the seeds (the edible portion of the fruit) of the most magnificent crimson color, highly aromatic and very sweet. This pomegranate is simply magnificent and people who have never before liked this fruit have praised it as unequalled. The Papershell is a fine grower, good bearer and ships well. October.

Sweet Fruited. Fruit large, with sweet juicy pulp; ripens in September.

Wonderful. This magnificent variety of recent introduction is the largest and most attractive of all pomegranates. Fruit is often five inches in diameter. The bright maroon lustre of the fruits makes them very much sought after. Add to this a pulp of the very richest garnet color, an abundance of juice as dark as port wine and of exquisite flavor, and you have a fruit which must win its way to general favor. It ripens early, does not burst and is very valuable for shipment to the Eastern markets. October.

MISCELLANEOUS FRUITS.

THE BANANA. *Musa*.

ONE of the most ornamental of the fruiting plants. A native of the tropics but finds California sufficiently warm throughout the entire year so that occasionally a bunch of fruit matures. Banana culture as a commercial proposition is not to be considered on the Pacific Coast. From the standpoint of a novelty, however, it has its place. The striking leaves often two feet wide and eight feet long, make it a fine plant for decorative purposes.

Cavendishii. Quite tender, rather dwarf in habit and therefore easily protected. Well adapted for greenhouse culture. Fruit yellow, small, in immense bunches.

Orientum or Hart's Choice. One of the hardiest, leaves usually frosting off, but the stalk stands; fruit clear yellow, skin soft and thin; flesh firm, melting, buttery, with unsurpassed fruity flavor.

Sapientum or Orinoco. One of the hardiest and commonest sorts in Florida. A very rapid and robust grower, with large dark green leaves. Fruit large, bunches medium. One of the best sorts for cooking, baking or served with sugar and cream.

THE CAROB.

✓ **Ceretonia siliqua.** CAROB TREE. ST JOHN'S BREAD TREE. Native of the Mediterranean regions. A most beautiful evergreen tree, attaining a height of 60 to 70 feet, with a dense spreading head. The saccharine seed pods are of value as food for horses, cattle and hogs, containing, as they do, about 66 per cent of sugar. The meat of the sheep and hog is much improved in flavor by this food, while its fattening properties are twice those of oil-cake. The fruit also yields a medicinal syrup. A fine tree for dry situations, and does exceptionally well in the interior valleys of this State, and in the southern part. In addition to its value as an ornamental tree, its commercial importance is a matter of some moment, for it is the basis for some of the best stock foods, hence there is no reason why California should not be the source of supply instead of Europe. The tree is very striking for avenue purposes and in conjunction with its commercial value should prove profitable as well as ornamental.

CUSTARD APPLE *Anona cherimolia*.

Introduced about forty years ago, finding conditions adapted to its successful culture in many localities in th

State, not subject to too severe frosts. The tree grows fully as large as an orange, and produces fruits in great abundance from three to five inches in diameter, heart shaped and grayish brown in color when fully ripe. The flesh, in which thirty or even more brown seeds are to be found, has the consistency of ice cream, with a custard flavoring blended with pineapple and banana.

THE ELAEAGNUS.

✓ **Elaeagnus longipes.** JAPAN OLEASTER. A beautiful new shrub from Japan. The bright yellow flowers appear in the early summer, succeeded in June with an abundance of oval-shaped fruits about three quarters of an inch long, of deep orange-red color covered with minute white dots, which are showy and attractive. The flavor is pungent and agreeable and the fruit makes an excellent jelly. Worthy of extensive cultivation for fruit and ornamental purposes.

THE GUAVA.

✓ **Psidium pyrifera.** PEAR OR LEMON GUAVA. Grows to be quite a large shrub, fruit pear shaped, yellowish, valued for jellies and preserves. As it is rather tender it is adapted only to the most favored locations.

✓ **P. cattleianum.** THE STRAWBERRY GUAVA. Shrub or small tree of bushy growth. Immense bearer, producing fruits larger than English walnuts, nearly spherical; skin of a fine deep claret color, resembling that of the fig, but thinner; pulp fleshy, soft, juicy, purplish red next to the skin but white at the center, with a strawberry like flavor and fragrance, hence the name. Much hardier than the preceding. Very popular for jellies, jams and preserves, also very good when eaten out of the hand.

✓ **P. lucidum.** YELLOW STRAWBERRY GUAVA. Has a large yellow fruit and said to have a better taste than the purple fruited form.

THE JUJUBE.

✓ **Zizyphus jujuba.** Sometimes called the CHINESE DATE PLUM. Extensively grown in China. A beautiful ornamental tree attaining a height of twenty-five to forty feet with a bright glossy green locust like leaf producing fruit in great profusion the fourth year after planting. The fruit is of about the size of a small plum, having a light brown exterior, which grows deeper and wrinkled when fully matured. The pulp is of a gingerbread color, enclosing a hard elongated stone. Ripens in September

and the refreshing acid flavor makes them very attractive when eaten dried from the tree. If desired they may be gathered when mature, stored in a dry place, when the pulp becomes quite soft, being very much sweeter than when eaten fresh. Commercially the fruits are valuable as a paste for confectioners.

THE LOQUAT. *Eriobotrya*.

The *Eriobotrya Japonica* of the botanist, erroneously called Japanese Medlar, Japan Plum, Biwa of the Japanese. A beautiful evergreen shrub or tree attaining a height of fifteen to thirty feet, bearing pear shaped fruits of a pleasant acidulous flavor and of lemon yellow color. Blossoms in November and matures its fruits in April and May, growing well in most any soil. The leaves are large, dark green, rough and markedly crimped, and the young wood is quite woolly. The tree is a compact grower and forms a dense and well rounded head. It is very prolific. The fruit of the improved types enumerated is from two to three inches long and one and a half inches in diameter. The fruits are borne in immense clusters from twenty to thirty in a bunch. The flavor is distinct having some resemblance to the cherry. The fruit ships well, and although not well known, its beautiful appearance, fine texture, good color, melting flesh, fine aroma and refreshing sub-acid flavor cause it to be in great demand wherever introduced. It makes an exquisite jelly. When grown in pots it makes a good decorative house plant.

Advance. (*New*). Fruit very large, from 2½ to 3 inches long. Markedly pyriform in shape. Skin deep lemon yellow; flesh firm, juicy and sweet, with a distinct attractive flavor when fully matured. The first to ripen its fruits.

Premier. (*New*). Fruit large, oval in form and flattened at both ends, two inches long and the same breadth when cut transversely in the broadest part. Color is lemon yellow; flesh melting, juicy and sweet; very little tartness; seeds quite small.

Seedling. Fruit medium, borne in immense clusters. Varying in color from yellow to deep orange; flesh melting, juicy and sweet.

Victor. (*New*). One of the largest of Mr. C. P. Taft's introductions and one of the earliest. Fruit three inches long and shaped somewhat like an egg, but more pointed at the stem end; skin of a golden yellow color; flesh greenish-yellow, slightly vinous but quite sweet; clusters large and very striking; very firm when mature and one of the best for preserves and jellies.

THE MEDLAR.

Mespilus germanica. A very large tree, with soft luxuriant foliage growing ten to fifteen feet high. The fruit is of about the size of a small apple, very much flattened with a very wide open eye, flanked with the calyx leaves. It remains quite hard until mellowed by frosts, when incipient decay sets in and it becomes brown and soft. It has an agreeable acid flavor.

JAPANESE=CHINESE FRUITS.

Hovenia dulcis. A small round headed tree, with handsome somewhat shining foliage; small greenish flowers appear in July succeeded by small, sweet aromatic fruits of reddish flesh maturing in the fall.

Lychee. (*Nephelium litchi*). A fine fruit common among the Chinese, of about the size of a walnut. The outer covering consists of a thin brittle shell, under which is a layer of soft, aromatic and delicious pulp, and in the center a rather large, smooth, hard shelled seed from which the pulp readily separates. One of the most delicately flavored fruits of the tropics. In the dried state it is exported to all parts of the world and is one of the most highly prized sweet-meats of the Chinese. Rather tender and therefore adapted to only the most favored locations.

THE GRAPE.

THE geographical distribution of the grape is a wide one, and includes most all countries coming within the tropical and temperate zones. It finds its most vigorous development in the warmer sections of the temperate areas, enjoying its greatest luxuriance at a point where the two zones meet, if such an expression be allowable. Hence we find grape culture the leading horticultural pursuit in the warmer regions of France, Germany, Italy and the Mediterranean regions, in the foothill lands of Australia, along the base of the mountains of the South American states, and particularly in the foothill sections of the mountain valleys.

In California, and especially in the San Joaquin Valley it finds ideal conditions, and in Fresno County, the raisin, table and the wine sorts constitute our leading industry, easily leading all others in money value and commercial importance. Owing to these facts, the Fancher Creek Nurseries have long made grape growing a special study as well as a leading division of its large propagating business. This experience not only covers a wide range, but embraces years of experimental culture, which has given us a basis for the selection of varieties calculated to meet every condition of soil and at the same time prove profitable to the growers. At present our stock comprises all the best sorts in raisin, wine and table varieties, growing two million plants annually. Observations made in Europe and a close study of conditions prevailing in the South American States have given us an insight into requirements which makes assurance that what we have to offer will prove de-

sirable. Our vines are free from disease and insect pests, and are strong in constitutional qualities, hence vigorous growers.

LAYING OUT A VINEYARD.

First establish your base lines. It is best to have this done with a transit, particularly if there are no established regular subdivision lines to work from. If the base lines are not at right angles, the rows will not be straight, and nothing is more unsightly. Add to this the difficulty of plowing, cultivating and the advantages of straight rows will be readily understood. For planting use a steel wire of about No. 12 gauge divided up into links of two or four feet with one inch rings between the links, or for that matter they may be longer or shorter, depending on the distance the vines are to be set apart. The advantage of a planting chain made in this manner is that it will not stretch like a straight piece of wire, and furthermore it may be used to plant other orchards or vineyards where it may be necessary to make a change in the distance apart the vines or trees are to be set. This change is easily made, it being only necessary to tie a piece of colored cloth in the ring to which the links are fastened. The length of this wire varies according to the notion of the planter, but 250 feet is about the limit which can be handled to advantage.

The chain in general use by vineyardists is made of No. 10 galvanized wire with three inch rings at each end, and at equidistant points on the chain a piece of fine wire is wrapped and soldered into place. With this style of chain it would be necessary to change the markers to other

points for planting at greater or less distances. It is best to have the wire the width of the check, the last link coming flush with the stake indicating the roadway. These roads should be at intervals of 24 rows for a wine and table vineyard and 30 rows for a raisin vineyard. Start at one corner of the field with the chain which should have three inch rings at each end for inserting the iron stakes, which should be made of one-half by two inch iron, two and one-half feet long and drawn down to a point at one end. The



A PRUNED AND UNPRUNED GRAPE VINE.

Figure to the left shows how to prepare vine for planting.

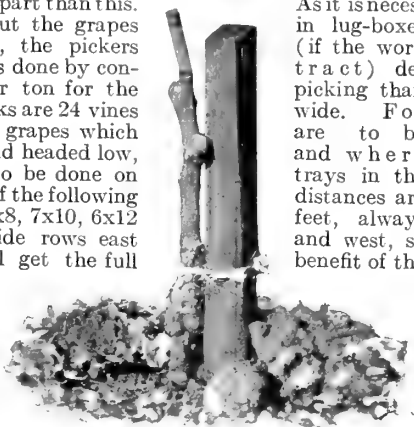
stakes which are to be used as markers may be split out of redwood or any other material for that matter and at least six inches of one end dipped into a bucket of whitewash so that the line of the base rows may be readily seen.

Having set the stakes along the outside line at the distance apart the vines are to be planted, start at the same end of the field again and set another line of stakes parallel with the first line and the length of the chain distant from the outside line. Proceed in this manner until the entire field is laid out in checks. With this preliminary work done and having exercised care in the measurements to have the base lines parallel and the stakes in each block opposite each other, no difficulty will be experienced when planting commences to have the vines line up.

DISTANCE TO PLANT.

This always gives rise to much discussion and opinions vary so that the planter is often in a quandary as to what course to pursue. The prevailing practice is to plant wine

grapes 8x8 feet, leaving out the twenty-fifth row for avenue. For wine and table grapes the avenues should not be further apart than this. As it is necessary to carry out the grapes to the avenue, the pickers of harvesting is done by command more per ton for the where the checks are 24 vines types of raisin grapes which short pruned and headed low, the drying is to be done on vineyard, any of the following satisfactory: 8x8, 7x10, 6x12 leaving the wide rows east the trays shall get the full sun's rays. In this case the checks may be 30 rows wide. For are to be and where trays in the distances are feet, always and west, so benefit of the



FIRST YEAR AFTER PLANTING.

For staked vines of raisin grapes, where the drying is to be carried on in the vineyard, 6x12 feet is undoubtedly the most economical distance to plant, as picking is much facilitated and the trays get the full benefit of the sun, the raisins cure quickly, which is not the case where vines are closer together. Table grapes should not be planted closer than 8x10 feet with the wide rows north and south, the grapes then have more exposure to the sun and mature more uniformly. This rule applies more particularly to the varieties which ripen rather late, like Cornichon, Emperor, Gros Colman, Black Morocco, etc.

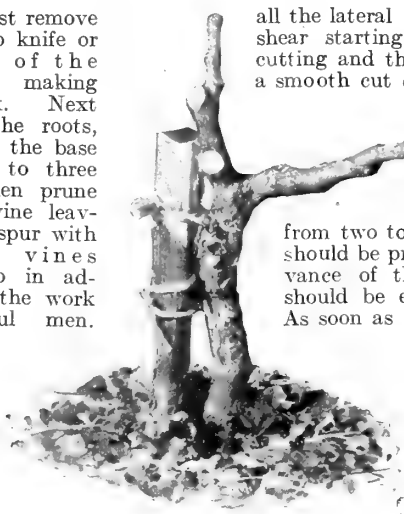
PREPARING FOR PLANTING.

First remove sharp knife or base of the vine, making stock. Next all the roots, from the base

Then prune the vine leaving one spur with The vines or so in advance of the work careful men.

all the lateral roots with a shear starting between the cutting and the top of the a smooth cut close to the shorten in radiating of the cut-inches.

the top of ing only from two to three buds. should be pruned a day advance of the planting should be entrusted to As soon as pruned, the



SECOND YEAR AFTER PLANTING.

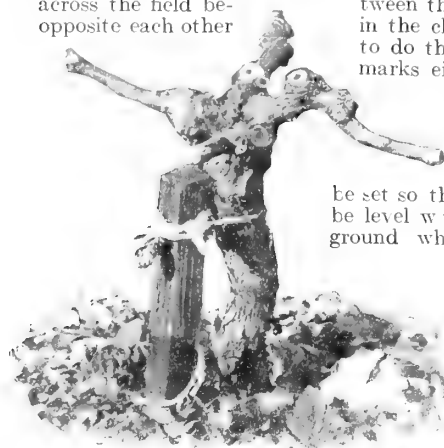
vines should be heeled in and the soil either wet or tamped down to prevent the roots from drying out. The heeling in ground should be centrally located so that it will not be necessary to carry the vines too long a distance to the planters.

HOW TO PLANT.

Each man should be provided with a bucket or five gallon coal oil can. A small quantity of water in the bottom will keep the roots moist. Each bucket should be filled with vines and replenished from time to time with vines as they are needed by the planters.

The planting wire should be stretched across the first check to two stakes which should be directly opposite

to each other. Each planter should have charge of two marks on the wire. As an illustration figure on a basis of planting the vines eight feet apart each way and leaving out every thirty-first vine for an avenue. It would be necessary to have a chain 250 feet long over all, including a one foot link at each end for the ring and to permit drawing the chain taut. To such a chain it would be necessary to have seventeen men, two to stretch the chain across the field be-



THIRD YEAR AFTER PLANTING.

of which should be well tramped in, the top being left loose. Having set this line of vines, the chain is carried

TRELLISED VINEYARD,
SHOWING METHOD OF
PRUNING.

CARE AND PRUNING THE VINE.

Specific rules for cultivation and irrigation cannot be laid down, for this work is dependent on soil conditions, water, rainfall, etc. It goes without saying that thorough cultivation and careful attention to keep the vines in an active state of growth during the growing season, will be amply repaid when the vineyard reaches its bearing age. Far better for the vines if they do not produce any grapes until they reach the third year.

The training of the vine should be given careful attention the first year of its growth. In order that the plant

tween the two stakes set in the check and fifteen to do the planting. The marks eight feet apart in the chain indicate where the vines are to be set. In planting the vine should be set so that the collar will be level with the top of the ground when it is settled, except with grafted vines, which will be referred to later. The soil in the bottom of the hole should be loosened up, and that used to fill in should be top soil, the first few shovels

to the next two line stakes, and so on until the check is planted. Within two weeks after planting, the earth should be settled around the vines either by hauling water to them or by irrigating, running the water in furrows along each row. This is important, for even with a good field boss over a crew of men, some of them will be careless, fail to tramp the soil around the roots and unless a timely and heavy rain should cause the soil to settle, the vines will dry out and die.

may not form a head close to the top of the ground a short stake allowing it to be a foot above the ground should be driven beside each vine. These stakes should be about one and one-half inches square and two feet long. In July before the growth of the canes has become lignified they should be tied with three or four ply baling rope to the stake, and about one-third of the top growth cut off. This shortening in of the canes causes them to become stocky and as a result of the tying up there are a number of straight shoots, the strongest of which may be selected the following winter, the others being removed, to form the head of the vines. This cane is cut back to twelve inches, all lateral branches being cut away. This single cane is carefully tied up to the stake. The head should be formed from eight to ten inches from the top of the ground. The second year from two to three spurs with three eyes are left to form the head of the vine. The third season the vines will have become stocky enough to become self supporting and the short stakes may be removed if this is found to be the case. In the event that the vines are to be short pruned, from one to two more spurs should be allowed to remain with three eyes on the current seasons growth. In later years a few more spurs are left each year on the original spurs forming the head, the number being largely a matter of judgment on the part of the pruner.

If the vines are of a class requiring long stakes and to be grown with canes, it is far better to defer driving these long stakes until the third year, so that the head of the vine will be fully established. Coast redwood stakes are the most satisfactory but even these should be dipped in hot asphalt or coal tar to prevent rotting. The tar should extend far enough up the stake from the pointed end, so that when driven the tarred portion will be at least six inches above the top of the ground.

In staked vines from two to three canes are taken up the third year, and from three to four spurs with three eyes properly distributed around the head of the vine are allowed to remain, to furnish new canes in succeeding years. These remarks apply particularly to the Sultana and Thompson Seedless varieties. In such varieties as Emperor, Flame Tokay and Cornichon, it is customary to take up from two to three canes, allowing these to remain for a number of years, shortening in the spurs to three eyes each season.

In tying up the canes do not draw them up close to the stake in the middle, but let them belly out, as this will cause the buds to push out better and render them more fruitful. The number of spurs allowed to remain must be largely a matter of judgment on the part of the pruner, depending very much on the growth of the vine. Always maintain some spurs at the head of the vine, so in the event it is found necessary to cut out the old canes, new ones will be available to replace them. The very satis-



STAKED VINE, FOUR YEARS OLD

factory results which have been obtained in recent years from growing the Thompson Seedless on a trellis, will no doubt cause this method to be followed. Vineyards of this variety so pruned rarely fail to produce a good crop under ordinary conditions. The method of pruning should be the same as has been previously recommended up to the third year, when, instead of tying the canes to a stake, they are twined on wires. The usual plan of procedure with this variety is to drive 2x2 inch by 6 foot stakes to each vine and string two wires of No. 12 gauge, one 32 inches above the ground and the other 48 inches. Large poultry netting staples are of sufficient size to hold the wire in place or bore holes in the posts and pass the wire through them. To prevent the wire from becoming slack the end stakes at each row in a check are held in position by a 2x3 inch brace which should be long enough to reach from the top of the outside stake to the base of the stake in the next row. This brace can be done away with by using a 3x3, 7 foot outside stake and slanting it. The canes are wound around the wires and tied in place with lath yarn which is a name given to old hauser rope which has been unraveled. The old canes are cut away every winter and replaced with new ones, which shoot out from the spurs at the head of the vine. This method of training is well worthy of trial with Muscats, and some types of wine grapes, using one wire instead of two, and stretching it 24 inches above the ground. This method makes cultivation somewhat more expensive as it only permits working the rows one way so that the centers between the rows must be worked out with a hoe. It facilitates picking and also prevents the crowding of the bunches, with the additional advantage of increasing the product of varieties inclined to be shy bearers.

TIME OF RIPENING.

As this varies in different localities and is largely dependent on climatic conditions, we have designated this by periods: 1st period indicates varieties ripening from August 1 to September 1; second period September 1 to October 1; third period October 1 to 15th; fourth period October 15 to November 1.

RECENT INTRODUCTIONS.

Dattier de Beyrouth. (*Rosaki*). Of the numerous varieties of grapes which we have introduced from Europe in recent years, not one is to be compared to this magnificent variety. It has been bearing with us now for three seasons and fulfills our most sanguine expectations as a shipping grape. It is the most popular grape of Asia Minor and is used there for table, shipping and raisins, being the only variety outside of the Sultanina blanche (Thompson Seedless) from which raisins are made. It is earlier than the Malaga, and the vine is fully as strong a grower, and if anything a heavier bearer. Bunches large, only slightly shouldered, berries loose, never compact, this one point adding very materially to its value as a shipping grape. Berries very large, quite oval in form, one inch and over long by three-quarters of an inch cross diameter, skin thin but tough, greenish at first but as the grape matures turning to a beautiful golden amber and covered with a whitish bloom; very fleshy, juicy and sweet, with little or no acidity. Its keeping qualities are unsurpassed and even when allowed to remain on the vines until over-ripe, it shows no inclination to drop off the stems. We predict a great future for this beautiful grape and our remarks pertaining to it hardly do it justice; it must be seen and eaten before its unsurpassed qualities can be appreciated. 1st period. See last page of cover for illustration showing bunch and berry life size, made direct from a specimen bunch cut from our own vineyard.

Sultanina Rosea. It is a pleasure to offer this new grape, which is identical with the well known Thompson Seedless in everything except color. The first vines of this variety are said to have been introduced by the United States Department of Agriculture, but it is only within the last two years that it has fruited sufficiently to determine its value. The vine is a strong, vigorous grower and

gives every promise of being a regular and heavy cropper, particularly when the canes are trained on a trellis. The bunches are cylindrical, very tapering and measure in many instances sixteen inches long. The berries are oval, medium in size and vary in color from a violet rose to a deep coppery red, and are loose in the cluster. The fact that it ripens at the same time as the Thompson Seedless will make it very valuable for shipping in conjunction with that variety. It has only been dried to a limited extent, but enough has been learned to determine its value, it being identical with the Thompson Seedless in this State. Indications go to show that it will meet every requirement of the market, both for shipping in a fresh state, as well as for raisin purposes. 1st period.

FOR TABLE, RAISINS AND SHIPPING.

Alicante. Bunches large shouldered, closely set; berries ovate, large; skin black, with thick, blue bloom; flesh tender, delicious and very sweet. One of the standard greenhouse grapes in Europe. 2nd period.

Almeria. (*Ohanes*). A strong grower; bunches large, loose shouldered; berry large, oval, yellowish-green. This is the grape which is so largely shipped from Spain, packed in cork dust, selling readily at very remunerative prices. 3rd period.

Black Ferrera. Bunches large, shouldered, loosely set; berries large, oval, skin thin, black with violet bloom; flesh sweet, crackles; a most delicious table grape and valuable for shipping. 2nd period.

Black Barbarossa. Fruit reddish black, with fine bloom, large, round; flesh tender juicy; bunches very large, regularly tapering, well set. 2nd period.

Black Cornichon. (*Red Cornichon. Malakoff Isjum*). Bunches long and loose; berries long, olive shaped, tapering at both ends; skin thick and dark, covered with bloom; flesh firm, with pleasant flavor; a very desirable variety for shipping and marketing; ripens late. 3rd period.

Black Hamburg. (*Frankenthal*). This is the famous national English grape. Bunches very large, heavily shouldered; berries large, round, skin thick, coal black when fully ripe; flesh sweet and juicy; one of the best table and market grapes. An immense bearer. 2nd period.

Black Morocco. Bunches medium to large, closely set; berries very large, oval, skin thick, dark red, becoming black when fully ripe; flesh firm, juicy, sweet and crackling; ripens late, keeps well, an excellent grape for shipment. 4th period.

Bowood Muscat. Very similar to the Muscat commonly grown for raisin purposes, differing only in the shape of the berries, which are round and somewhat thicker skinned. 1st period.

Chasselas Ciotat. Bunches small, compact; berries clear, greenish-white, small; flesh juicy and pleasant; leaves very much lacinated, hence the name, "Parsley-leaved Grape;" very early, ripening first week in August; should be in every collection. 1st period.

Chasselas Croquant. (*Diamant Traube*). Bunches short and compact; berries very large, greenish-white, skin thin; flesh very sweet and delicious; a very handsome grape. 1st period.

Chasselas Golden. Bunches medium, compact; berries of an amber color, sweet and juicy; ripens latter part of 1st period.

Chasselas de Fontainbleau. (*White Sweetwater*). Bunch large and compact; berries medium size, round; skin thin, transparent, greenish-yellow; pulp tender, juicy, sweet, and highly flavored; one of the best early grapes. 1st period.

Chasselas Rose. Bunches long, cylindrical; berries small, round, clear, rosy red; flesh firm, juicy, sweet and pleasant; a very pretty grape; ripens very early. 1st period.

Emperor. Vine a strong grower and heavy bearer; bunches very large, long and loose-shouldered; berry large, oblong, deep rose colored, covered with light bloom, firm, skin thick. One of the most profitable late varieties to plant for market; its firmness, good keeping qualities and rich color cause it to be in great demand in the eastern markets every year. Withstands rain better than any other variety. 4th period.

Flame Tokay. Bunches very large and moderately compact; berries large; skin thick, pale red covered with bloom; flesh firm, sweet; an old standard variety, always commands a good price in the eastern markets, and as a table grape more extensively planted than any other variety. 2nd period.

Golden Hamburg. Bunches large, loose, broadly shouldered; berry large, oval, somewhat flat at the end; skin greenish-yellow; flesh soft, melting, juicy. 2nd period.

Golden Queen. Fruit greenish-yellow, becoming golden when fully ripe; large long-ovate; flesh juicy, with faint trace of Muscat. A magnificent table grape. 2nd period.

Gros Colman. (*Dodrelabi*). This is the variety so extensively cultivated in the hot houses of England, Belgium and the North of France where it reaches perfection. Bunches large, cylindrical, loose; berries as large as Damson plums, spherical, slightly flattened; skin thin, very dark, covered with bloom; flesh firm, with a pleasant vinous flavor; ripens in October. Without doubt a valuable shipping grape; its large size, good keeping qualities and delicious flavor all combine to bring it into prominence as a desirable market and table variety. 4th period.

Gros Maroc. Fruit nearly jet black, with a fine bloom, large, oval in shape; flesh firm, juicy, with a vinous rich flavor. Somewhat similar to the preceding, but ripens earlier, is firmer and more delicate in flavor. Foliage large and leathery, making it a very valuable variety for arbor culture. 3rd period.

Lady Finger. (*Pizutella di Roma*). Bunches unusually large and long; berries long, shaped like a lady's small finger; a grape famous in Asia Minor; rare, highly esteemed for table use. Vine a rapid, strong grower with large luxuriant foliage. 3rd period.

Malaga. Vine a strong grower, and immensely productive, thriving in almost any soil, bunches very large, often weighing ten pounds, compact, shouldered; berry very large, oval, yellowish-green; skin thick, fleshy. One of the best shipping grapes, commanding a good price in the eastern markets every season; makes a second quality raisin. 1st period.

Muscat of Alexandria. (*Gordo Blanco*). Bunches long and loose shouldered; berry oval, sometimes round; yellowish-green; skin thick; flesh with a decided Muscat flavor. This is the variety so extensively planted for raisins. The distinctive feature between the Alexandria and Gordo Blanco is supposed to be in the shape of the berries, the former being oblong and the latter round. In this locality the two varieties have been found to be so nearly identical, round and oblong berries being found on the same vine, that they are classed as Muscats and no distinction is made by even the most experienced raisin vineyardists. 2nd period.

Muscat Hamburg. Bunches large; fruit large, purplish black; long ovate; flesh firm, rich, juicy, with decided Muscat flavor. 2nd period.

Purple Damascus. Bunches large, loose; fruit is very large; deep purple when fully ripe; skin thick; flesh meaty and juicy; a splendid grape for the interior valleys; a good shipper. 2nd period.

Rose of Peru. Vine an exceedingly strong grower; bunches very large, shouldered, loose; fruit round, large with firm and crackling flesh; a very handsome grape of fair quality; and highly esteemed as a market variety. 2nd period.

Sabal Kanski. Said to be the Imperial table grape of Russia. A handsome, very large coppery-red, oval grape, tapering at the ends; bunches immense, often weighing eight pounds; flesh sweet and crackling; a much superior grape to the Tokay in flavor, and on account of its firmness undoubtedly a good shipping grape, but ripens rather unevenly in some localities. 2nd period.

Sultana. Bunches long and very compact; berries small, amber colored, seedless; makes fine seedless raisins; vine an immense bearer; grows on sandy soils; producing large crops. 1st period.

Thompson's Seedless. (*Sultanina blanche*). Identical with the Seedless Sultanas of Asia Minor. Vine an enormous bearer and very rapid grower; bunches very large; berries greenish-yellow, firm, oval, seedless; skin thin; much larger than the Sultana. This variety is attracting a great deal of attention in this valley, and it is preferred to the Sultana, having many qualities superior to it. The raisins are of a very superior quality, and are in good demand, a very early shipping grape, ripening in August. As a sherry grape much can be said in its favor. 1st period.

White Corinth. Bunches small and compact; berries small and seedless; skin amber. 1st period.

White Cornichon. An exact counterpart of the Black Cornichon, except that the grapes are white. 2nd period.

Zante Currant. (*Black Corinth*). Bunches medium; berries small, seedless; skin thin, black, blue bloom; flesh sweet, juicy and highly flavored; distinguished from White Corinth by the color of the berries, which are black and larger. This is the variety producing the currant of commerce, and imported from Greece under the name "Zante Currant." 1st period.

VINIFERA VARIETIES—FOR WINE.

Alicante Bouschet. A strong grower with a bunch of medium size; berries medium, very high in sugar; juice red. Gives a very superior wine, bright in color, and pleasant. A very valuable wine grape. 2nd period.

Aramon Noir. Vine strong, vigorous grower and immense bearer; bunch large, nearly cylindrical; berries large, bluish black, thin skinned; one of the most extensively planted grapes in southern France for wine purposes; a fine table grape but not adapted to long distance shipments. 2nd period.

Beclan. Particularly valuable for blending with claret types which lack color; bunches of medium size, long, cylindrical, compact; berries medium, black, round, crisp, juicy, with a fresh agreeable taste. 2nd period.

Black Malvoise. Vine a strong grower; berries large, oblong, reddish-black, with faint bloom; flesh juicy, flavor neutral; an immense bearer; an excellent table as well as wine grape. 2nd period.

Burger. (*Putzscheare*). A German variety which has fully demonstrated its adaptability to our hot interior valleys; produces a light, white wine of excellent quality; an immense bearer. 2nd period.

Cinsaut. Very much esteemed as a wine and table grape; berries large, black, oval shape, crisp and delicately flavored; makes a fine type of wine. Late in 2nd period.

Carignan. A fine grower and most abundant bearer; bunch very large, moderately compact, shouldered; berries medium, slightly oblong, black with blue bloom, sweet and juicy; makes a superior type of red wine. 2nd period.

Fehér Zagos. Vine a vigorous grower and immense bearer; very hardy and exceedingly productive in sandy and heavy soils; bunches large and compact; berries oval, yellowish-green. A valuable sherry grape. 2nd period.

Folle Blanche. Berries medium-sized, white, used extensively for the manufacture of brandy. 2nd period.

Grenache. Not only an immense grower but a very heavy producer in the interior valleys; makes an excell-

ent claret; always in good demand at the wineries. 2nd period.

Johannisberg Riesling. Very productive, yields an excellent white wine; bunches medium, compact; berries small, round, skin thin; flesh tender, sweet, juicy and highly flavored. This is the grape from which the celebrated Hoch wines are made. 2nd period.

Mataro. One of the finest grapes for claret; good bearer and heavy grower. All the great French authorities agree in placing the Mataro as the finest red wine grape of the Southern regions. 2nd period.

Mission. This is the old and well-known grape, first grown in California; bunches shouldered; berries medium, round, purple black, sweet and delicious. An old stand-by for making a good quality of claret. 2nd period.

Mondeuse. Very vigorous grower and exceedingly productive; bunch large, compact; berry medium black with blue bloom; makes a rather coarse wine but very valuable for blending. 2nd period.

Palomino Blanco. Vine a very vigorous grower and prolific bearer; bunch large shouldered; berry large, round, greenish-white; a magnificent grape for either sherry or white wine. Does remarkably well in the interior valleys. 2nd period.

Pedro Ximenes. (*Sauvignon Vert.*) Vine very vigorous, immense bearer; bunch of average size, winged, compact; berries medium, spherical, greenish-white, thin skinned; produces an excellent wine of the Sauterne type. 2nd period.

Petit Bouschet. A moderate grower but very productive. Makes one of the choicest of red wines, smooth and of delicate flavor; cluster medium, cylindrical; berry medium, round, black and with very red pulp. Very largely used for blending clarets, which are deficient in color. 2nd period.

Petit Syrah. (*Serine.*) A very strong grower and immensely productive; makes a fine claret of high character. Cluster rather long and loose, shouldered; berry slightly oblong, medium, black, with blue bloom. Regarded very highly among wine makers as one of the best of the claret types. 2nd period.

Semillon. Strong grower; bunch large winged; berries uneven in size, transparent golden color when ripe, thin skinned, with an agreeable flavor; is one of the finest white wine grapes of the Sauterne type and very extensively grown in France in the Sauterne district. 2nd period.

Zinfandel. Bunches large and compact; berries round, dark purple; the most extensively planted grape in California for making claret. 2nd period,

AMERICAN TABLE GRAPES. (VITIS AESTIVALIS)

This family of grapes is the one so extensively grown in the middle and eastern states. Some varieties are used there for wine purposes. These grapes all have a slip skin and a pronounced foxy flavor, which places them on an inferior footing commercially with the *Vinifera* type.

They may be planted in localities where extreme cold weather in the winter months would make it unsafe to plant *Vinifera*. They are particularly well adapted for training on arbors as they are strong growers and good climbers; the foliage is very showy. They are somewhat resistant to the attacks of *Phylloxera*.

Agawam. One of the best red varieties; bunches large, compact, frequently shouldered; berries large with a thick skin, pulp tender, sweet sprightly; vine very vigorous. 1st period.

Campbell's Early. This extremely early ripening grape promises to be one of the best new American grapes of recent introduction; bunch and berry large and glossy black with blue bloom, very sweet and juicy. A most excellent keeper. Very strong grower with large healthy foliage. 1st period.

Catawba. An old standard variety in the grape regions of the eastern states; bunches large and loose; berries round of a coppery red color, becoming purplish when well ripened; vinous and rich. 2nd period.

Concord. One of the most popular of the well tried native grapes. Is large size, both of bunch and berry; quality good, color black, covered with thick bluish bloom, flesh moderately juicy, rather buttery, very sweet. A vigorous grower, healthy and productive. The popularity of this grape has never waned. 1st period.

Goethe. Bunches medium; berry large; skin thin, yellowish-green, tinged with red; flesh tender, melting, sweet and delicious; ripens late. 2nd period.

Isabella. Our most extensively planted Eastern grape; bunches long, large and loose; berries black, oval, juicy and sweet, with distinct musky flavor; an immense bearer; a valuable market variety. 2nd period.

Moore's Diamond. A most desirable new white grape, originated in Brighton, N. Y.; bunches large; berry greenish-white, with yellow tinge, when fully ripe; flesh juicy, and almost without pulp; very few seeds. 2nd period.

Moore's Early. Bunches medium; berry very large, resembling Concord in quality, but more pulp; ten days earlier. 1st period.

Niagara. Bunches medium; berries large, roundish, uniform; skin thin but tough, pale yellow, with whitish bloom; flesh tender and sweet; vine vigorous and productive; one of the best white grapes. Occupies the same position among the white varieties as the Concord among the black; the leading profitable market sort. 2nd period.

Pierce. (*Isabella Regia*). A giant-leaved and very prolific variety, or rather, sport of the Isabella, produced by Mr. J. P. Pierce, of Santa Clara. The berries, like the leaves, are of extraordinary size, and when ripe the fruit is exceedingly sweet and strongly aromatic; berries bluish-black when fully matured; commands a ready sale in the market, the demand exceeding the supply; for size and quality it cannot be surpassed by any of the American varieties. 2nd period.

Woodruff. Vine a vigorous grower; bunches and berries very large and attractive and of very good quality; ripens early and among the native grapes takes the lead as a red market grape. 2nd period.

Worden. Said to be a seedling of the Concord. Bunch large, compact, handsome; berries larger than Concord; ripens a few days earlier and is said to be of superior flavor. 1st period.

RESISTANT VINES.

The ravages of the *phylloxera* in the grape regions of France and the practical extermination of the French vineyards through this dreaded pest, are too well known to require repetition here. Today France is producing more wine than she did in her palmiest days, prior to the time this pest was introduced. This wonderful change has been brought about by the grafting of the table, raisin and wine varieties, all of which are natives of Europe belonging to the *Vitis Vinifera* class, and none of which, no matter how strong they are, but will finally perish when attacked by the *phylloxera*.

The resistant grapes were originally wild American grapes, natives of the Mississippi valley. These were taken in hand by the French viticulturists, improved by hybridization and selection, until today a large number of sorts adapted to a variety of soils and locations have come into general use.

The destruction of *vinifera* vines is due to the roots rotting whenever the insect makes a puncture, causing the vine to perish in time. In the roots of the resistant, although subject to these attacks, the punctures do not extend deeper than the bark of the rootlets, and as this is sloughed off each year, the roots are left as healthy as before. The grapes of the resistant are worthless, the vine

simply serves as a stock for the more valuable foreign varieties of wine, table and raisin grapes, all of which succumb to the attacks of the phylloxera on their own roots.

This terrible pest is now to be found in the vineyard regions over the entire world, and has already commenced to destroy the vineyards in certain sections of California. Realizing that in time our vineyards too would perish, we have taken steps to introduce the leading sorts of resistant grape vines from France, and already have hundreds of thousands growing in nursery form.

It is our purpose to make the growing of grafted resistant vines one of the special features of our nursery business, for we fully realize that the vineyard industry of California and other countries also can only expand and maintain its prestige by extending the acreage in the future, using resistant vines to give it permanency. We are making practical experiments in our own vineyards, with a number of varieties of resistant vines, and have imported direct all the very best varieties from France, so we feel that we will be in a position to give advice to our customers on this subject based on practical experience.

HOW GRAFTED RESISTANT STOCKS ARE GROWN.

It is only natural that vines grown on phylloxera resistant roots should be more expensive than vines grown on their own roots, when the painstaking work necessary to grow resistant is taken into consideration. Practically all the grafted vines are bench grafted.

The resistant cuttings, none of which should be less than a quarter of an inch in diameter, are cut into fourteen-inch lengths, the cut at the base of the cutting being made close to the joint. All the buds must be cut out with either a sharp knife or shear, otherwise suckers will start out and be a constant source of annoyance to the vineyardists. The scions are cut into three-inch lengths, and are grafted on to the cuttings with a whip graft. The union is either wrapped with raffia or Dexter twine which has been previously soaked in melted grafting wax. The cuttings are then placed in a callousing bed where they remain until a well developed callous makes its appearance at the joint of the scion with the stock. The grafted cuttings are then carefully taken out and set about three inches apart in nursery rows and are completely covered over. The cuttings are not disturbed until July, when the soil is drawn away, and the union of the scion with the cutting is exposed and all roots starting from the scion are carefully cut off. In digging the grafted vines there is always a certain percentage with imperfect unions and these are thrown out. This briefly enumerates the work required in growing this class of stock.

With vines on their own roots, the cuttings after being calloused are planted, or if the soil in the nursery is a warm, sandy loam, the cuttings may be planted as soon as made. Except for irrigating and cultivating they require no further attention during the season.

PLANTING GRAFTED VINES.

The cultural directions already given for planting vines on their own roots may be applied to the resistant in so far as preparing the vines for planting. In planting the rootings, the vines should be set so the union of the stock is at least an inch above ground. As soon as the vine is planted, cover it with soil leaving only the top bud exposed. When the vines have a good strong growth, clear the soil away from them and cut off any roots which may have started from the scion. This is one of the important points in bringing a resistant vineyard into bearing, for if these roots are not cut off the resistant roots dwindle away and the vine reverts back to its own root. Suckers starting from the resistant cutting should also be removed.

It is necessary to follow up this root pruning for at least three years after the vineyard is planted, for the scion will invariably start out new roots if the soil from plowing gets banked up against it. In later years after the wood of the vine becomes well hardened up there is very little danger of the scion making roots. The same recommendations for training and pruning vines on their own roots may be followed with grafted vines.

PHYLLOXERA RESISTANT VINES.

Their only value lies in the fact that they do not succumb to the attacks of the phylloxera, and for this reason they are used as stocks for grafting the vinifera varieties of wine, table and raisin grapes. The varieties enumerated below have been selected and imported by us direct from France.

The adaptability of the varieties to various soils is taken from recommendations of men who have had years of experience in France and from our own observations.

None of these varieties have any value as direct producers. *The italicized words are the names of the originators.*

✓ **Aestivalis X Colcicola—Riparia X Rupestris, 554-5.** Adapts itself to the driest of soils, and can be used for the same soils as 106-8; possesses advantages over that variety, however, in the fact that it will also grow where there are heavy lime formations.

✓ **Aramon X Rupestris Ganzin, No. 1.** Said without question to be one of the best Franco-Rupestris, and which for the past eighteen years has given excellent results and general satisfaction. Very vigorous, leaf like Rupestris, wood resembles more the vinifera. Thrives well on a light and heavy, compact soil, and grows luxuriantly on a soil containing a large percentage of lime. Better adapted to moist than to dry soils. Its roots are large and fleshy, and in spite of the many scales which cover them, it nevertheless withstands the attacks of the phylloxera.

✓ **Berlandieri X Riparia, 420 A. (Millardet and de Grasset).** This variety has a very close affinity to the European varieties of grapes, and adapts itself to moist and dry soils, including those having a large amount of lime. It is said to have a decided influence on the vine when grafted, causing the grapes to mature more evenly than on the Rupestris, or hybrids of Rupestris.

✓ **Berlandieri X Riparia, 157-11. (Coudere).** Has a large amount of Riparia blood, and thrives in a deep, alluvial soil. The Berlandieri X Riparia hybrids are easily propagated and are recommended for deep, alluvial soils and those heavily charged with moisture in the spring, but which dry out during the summer months. It is very resistant to phylloxera and its grafts are very prolific bearers.

✓ **Berlandieri X Riparia 34 E. (College of Montpellier).** Has more of the Berlandieri blood than the preceding and is adapted as a stock not only in an ordinary soil, but is also recommended for very dry and poor soils.

✓ **Chasselas X Berlandieri, 41 B. (Millardet and de Grasset).** This variety is grown just as easily from cuttings as the Riparia and Rupestris sorts; it is very vigorous and puts out a small number of large, fleshy penetrating roots. It possesses a great affinity for the European or Vinifera grapes, which seem to ripen more uniformly on this sort than on any of the other hybrids, and contain from one to one and one-half per cent. more sugar; it thrives well on chalky and on extremely dry soils and is said to be the most resistant of all Franco-American vines against phylloxera. Its roots seem to be absolutely immune from the punctures.

Lenoir. This variety has been very extensively planted in the State, but is now being replaced with varieties more resistant to the attacks of the phylloxera. It is well adapted to heavy clay soils. Has been found to be very satisfactory as a resistant in Napa and Sonoma counties on such soils. The grapes are rich in coloring matter, and are used largely for coloring clarets.

✓ **Mourvedre X Rupestris 1202. (Coudere).** Very vigorous, produces large branching shoots and powerful roots attacked by phylloxera, but withstanding it nevertheless on account of its very strong growth, it gives promise of being one of our most valuable stocks on deep fertile soils even when rich in lime. In France where it has had ten years trial on a large scale it is regarded very highly.

✓ **Riparia X Cordifolia Rupestris 106-S. (Millardet and de Grasset).** Comes to us with the very highest recom-

mendations from French authorities; experiments with it on the trial ground of the U. S. Department of Agriculture (at its several stations in California) is causing it to be recognized as one of the coming varieties. It is easily multiplied, grafts well and its powerful penetrating roots make it a valuable stock in even very dry, compact soils. With its other many good qualities, it is also very resistant to phylloxera.

✓ **Riparia Glorie de Montpellier.** Also called Portales, and is the best sort of the innumerable and many forms of Riparia that have been used in France for a period of 25 years. Of late years this variety has superseded all other varieties of Riparia. It is not suited to dry, compact soils, but should be planted in moist, alluvial soils. It is a vigorous grower, with large, luxuriant and heavily-ribbed foliage. It does well in California, where conditions are favorable for its development, growing finely in very shallow soils, providing they have the necessary amount of fertility.

✓ **Riparia X Rupestris, 101-14.** (Millardet). Very vigorous, thrives best in a deep, alluvial soil, not heavily charged with lime. This family possesses all the good qualities of its parents without their drawbacks; that is, they can be planted in soils where the Riparia will become yellow and the Rupestris will grow too vigorously. This particular variety is finding great favor in California, being a much more vigorous grower than the two following varieties of the same family.

✓ **Riparia X Rupestris 3306.** (Coudere). More of a Rupestris than a Riparia and distinguished from other varieties by its shoots which are pubescent, and in autumn of a characteristic grey tinge. Does well in gravelly soils, but is particularly adapted as a stock in moist soils.

✓ **Riparia X Rupestris, 3309.** (Coudere). Is distinguished from the two preceding by its leaf which is of small

size, of a brilliant dark green and thick almost like the Rupestris. It does well on hilly ground more or less dry where Rupestris St. George suffers from drought. It is also a first-rate stock on good soils and bears well and regularly. It stands very high as a stock in France and is equally as promising here.

✓ **Rupestris X Berlandieri, 301 A.** (Millardet). A vigorous hybrid, having a very close affinity to the vinifera family. The roots are large and strike down deep. The great advantage of this variety over the pure Berlandieri is that it is suitable to dry, rocky, limestone soils.

✓ **Rupestris St George** (also called Rupestris du Lot, Monticola, Phenomine). Stands in the same relation in the large family of Rupestris as the Riparia Glorie de Montpellier does among the Riparia. Has been more widely distributed and more extensively planted, not only in France, but throughout Europe and in California, than any other resistant. Of all the resistants it is the most vigorous grower; makes a strong head with heavy, closely jointed canes, and adapts itself to a great variety of soils; does equally as well in a moist, very heavy and compact, clay soil as in the driest hillsides, providing they are deep, having the remarkable faculty of sending its roots straight down in search of moisture. In rich fresh soils, they must be generously pruned to allow plenty of wood to bear the fruit and regulate the vegetation. Will thrive in soils with a moderate amount of lime, but should never be planted in shallow soils.

✓ **Solonis X Riparia 1615.** In vigor of growth very closely resembling the following.

✓ **Solonis X Riparia 1616.** A very strong growing variety, having a great resistance to phylloxera and making a fine union with the graft. It is a good stock for damp, loamy soils. Underside of leaves pubescent.

THE SMALL FRUITS.

THIS term usually applies to the berry family—Blackberries, Raspberries, Currants, Gooseberries, Strawberries, etc. The whole Pacific Slope, wherever fruit soils and sufficient moisture prevail, is adapted to their successful culture. In California there is almost a continuous growth, and intermittent cropping can be carried on almost during the entire year. Every family orchard should have a plot devoted to small fruits, and where the conditions are favorable and near to markets, they can be made immensely profitable when grown along commercial lines.

The preparation of the soil should be thorough. The roots being close to the top of the ground and of a small, rather fibrous nature, the importance of having the soil in the very best possible condition to insure a good stand of plants and a satisfactory growth must be apparent to anyone engaging in the culture of berry plants. Thorough dressing with well rotted stable manure will do much to promote a vigorous growth the first season, and having secured this, profitable crops may be expected the second year after planting.

Berry culture cannot be successfully carried on in California without irrigation, so that before planting the land should be graded, having the grade as uniform as possible so as to prevent flooding. A berry grower should be absolutely certain of water when it is required, and if there is any question about the supply from ditches, a pumping plant should be installed to have water available whenever it is needed. A delay of even a few days may mean the loss of the entire crop.

NEW BERRIES.

As the Logan and Mammoth Blackberries are practically in a class by themselves and the cultural directions for one applying to the other, we will consider them under the same head. They should be planted in rows six feet apart and eight feet between the rows. The best results are obtained by trellising the runners to wires on heavy posts, which will hold the wire taut. As soon as the fruiting season is past, the fruiting canes should be cut away and the new canes be bunched together and wound around the wire. At least two wires should be strung on the posts so that as soon as one wire is covered the remaining canes may be wound around the other. By following this method from year to year a heavy crop of large fine berries may be looked for annually.

A novel method of handling them is to plant in squares 8x8 feet. Drive three stakes one and one-half feet into the ground, using 2x2, 6 foot posts. Nail an old barrel hoop on the top of the posts and another two feet from the top. The shoots are trained over these hoops. It is simply astonishing the amount of fruit which will be obtained by this method of handling. Another satisfactory plan is to set 4x6, 7 foot posts twenty feet apart and nail 2x2, 18 inch cross ties to each post. Set the posts three feet in the ground and string No. 12 galvanized wire on the cross ties holding it in place with staples. The new shoots should be trained across, winding them around the wires from one wire to the other.

Loganberry. Originated with Judge J. H. Logan of Santa Cruz, Cal., from whom it derives its name. This berry is unlike any other in existence, being a hybrid between the raspberry and the blackberry. The fruit is



THE LOGANBERRY, NATURAL SIZE.



MAMMOTH BLACKBERRY.

sometimes an inch and one-quarter long, dark red, as large as the largest blackberry, and produced in immense clusters. It partakes of the flavor of both the blackberry and raspberry, a mild, pleasant, vinous flavor, delicious and peculiar to this berry alone; seeds small, soft and few; fruit ripens early, just after strawberries, and before blackberries or raspberries. The vine or cane of the Loganberry grows entirely unlike either the blackberry or the raspberry; it trails or grows upon the ground more like a dewberry. The canes are very large, without thorns, but have very fine, soft spines; leaves more like those of the raspberry than blackberry. It is excellent for the table, eaten raw or stewed, and makes a fine jelly or jam. Ripe in May.

Mammoth Blackberry. Supposed to be a cross between the wild blackberry of California and the Crandall's Early. Grows entirely unlike any other blackberry plant known. It is a rampant grower, trailing on the ground and under favorable conditions will grow twenty feet in a season; the canes are large, of deep red color when exposed to the sun; the foliage is large, thick, of a deep green color; enormously productive and exceedingly early, ripening three weeks before other cultivated kinds; fruit enormous, specimens measuring two and one-half inches long; seeds small, soft and abundant; core small, soft; in size and flavor said to surpass all other varieties of blackberries. Ripe in June.

Himalaya. Imported originally from the Himalaya Mountains by Luther Burbank and brought to its present state of perfection through his efforts. It is a remarkable grower, it being nothing unusual for canes to grow forty feet in a single season. It should be trained on a trellis. The pruning should be carried on in the winter months and the old canes cut to spurs something after the manner followed in pruning caned grape vines. It is an enormous bearer, and a good shipper; berry more round and broader than Kittatinny, and much juicier; very few seeds which are quite small and with almost no core. For canning and jams it has few equals and is also an excellent table fruit. Season is from June 15 until late fall.

Phenomenal. This is one of Luther Burbank's greatest berry triumphs. It is the result of a cross between the Improved California dewberry and the Cuthbert raspberry. The berries grow in clusters of from five to ten, and are somewhat larger than the Loganberry, to which it has a close resemblance. It is far more productive than that variety. The canes are much stronger and vigorous; fruit has a smaller core and the same quantity of berries will make twice the amount of jelly. It is easily grown, is very firm and it is not only one of the most profitable berries for the fruit grower, but a few plants in the backyard of a town or city residence will also be the delight of the housewife. The method of training and pruning is the same as for the Loganberry.

THE BLACKBERRY.

The most satisfactory way of handling blackberries is to plant in rows four feet apart with eight feet between the rows. The first season all the shoots which have attained

a height of two feet should be shortened in to twenty inches, this will cause them to send out many lateral shoots, so that instead of having the fruiting shoots confined to a few canes, there will be a number of lateral shoots from each of the main canes for producing fruit clusters. These laterals should have one-half of their growth cut off in the winter months. In the second year, as soon as the season's crop has been harvested, cut away the fruiting wood so that all the energy of the plant will be forced into the new growth. The young shoots should again be cut back at the proper height to develop laterals, and these, as has already been directed, should be cut back in the winter months. This method of pruning has other advantages by making the canes sturdy and self-supporting, and causes the fruit to be distributed over the entire plant instead of being confined to the terminal growth.

By having the rows eight feet apart, cultivation can be carried on with a horse, a very important point. A good supply of water, thorough cultivation and liberal applications of rotted barnyard manure are important features in the culture of the blackberry.

Crandall's Early. Everbearing; large and firm; very early; bears during the entire season.

Erie. Very productive of berries of the largest size; coal black, firm and solid; sells in the market at the highest prices; fine form; ripens early.

Evergreen. Introduced from Oregon; beautiful, laciniated foliage, which it retains all winter; berries large, black, sweet, rich and delicious; ripens from July to November; a fine berry for family use.

Kittatinny. Large, roundish, conical, glossy black; juicy, sweet, excellent when fully ripe; the most popular variety in California.

Lawton. Fruit large; ripens late; very productive.

Wilson's Junior. A seedling of Wilson's Early; said to be hardier and more productive than its parent.

THE DEWBERRY.

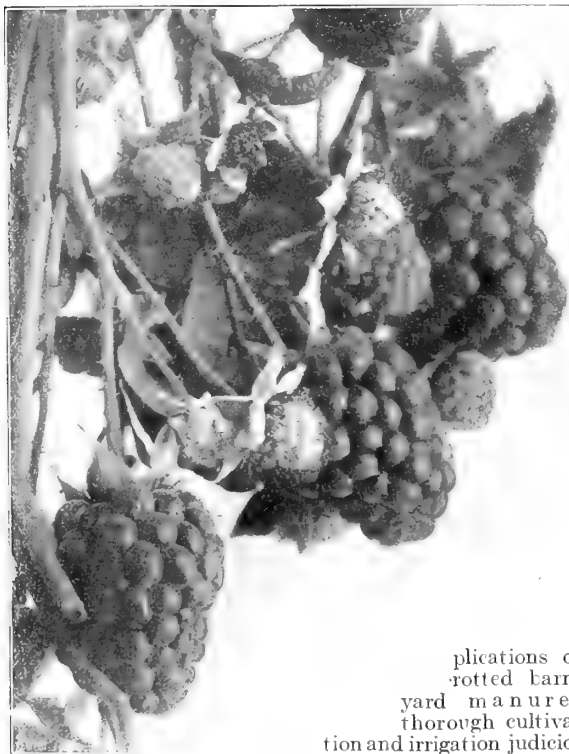
The improved varieties of Dewberry or trailing blackberry are very popular. They are enormous croppers, produce fruit of the very best quality which ripens fully two weeks earlier than any of the blackberries. Plants should be set four feet apart with rows six feet apart. When there is not sufficient rainfall to keep the vines in active growing condition, irrigation should be practiced. Immediately following the harvesting, all the old canes should be cut off and the following spring the new ones should be trained to a wire two feet from the ground. The method of trellising is the same as for the other varieties of trailing vines, except that the canes are closer to the ground.

Gardena. Has become very popular in recent years; berries large glossy black, sweet, rich and delicious. Vines are very heavy bearers and when once established produce an abundance of fruit annually. Fruit ripens second week in May.

Lucretia. Very productive; the berries are large and of unequalled excellence, soft, sweet and luscious throughout, of brightest, glossy black color. Ripens ten days later than the preceding.

THE RASPBERRY.

They do not grow as rank as the blackberry, so may be planted four feet apart, but not less than six feet between the rows. Directions for pruning are the same as have already been given for the blackberry. Do not allow more than five canes to grow from one root. Liberal ap-



SUPERLATIVE RASPBERRY.

plications of
rotted barn-
yard manure,
thorough cultiva-
tion and irrigation judiciously
practiced is sure to
develop fruit of the very
best quality and a liberal
supply of it.

Cuthbert. Berries very large; deep rich crimson; fine; good for shipping; the most popular of all raspberries; stands the sun and heat well.

Golden Queen. A seedling of the Cuthbert. A beautiful, large golden yellow berry, larger than its parent and surpassing it in beauty and quality. The desire for a yellow raspberry of high quality, combined with vigorous growth, is believed to be fully met with in this variety. Should have a place in every garden.

Gregg. Of good size and fine quality; very productive and hardy. Occupies the same position among black caps as Cuthbert among the red sorts.

Hansell. Medium to large; bright crimson; canes vigorous and productive; very early.

Malboro. The largest early red raspberry, ripening a few days after Hansell; beautiful bright scarlet; good but not high quality.

Mammoth Cluster. A large and very productive variety of the Black Cap; quality very good.

Souhegan. A valuable market variety; its earliness and large size make it one of the most valuable of the black raspberries; firm and sweet.

NEW RASPBERRY.

Superlative. Of English origin. Fruit red, large, conical, of excellent flavor and a great improvement over all other varieties of raspberries. It is a continual bearer, producing fruit all summer, the fruit appearing on the young shoots which start from the plant. It is most useful as a dessert fruit and is readily plucked on account of its long stems. It is a great market variety and the experience with it on this coast has exceeded the claims made by the introducers. It is worthy of general cultivation.

THE CURRANT.

Currants are usually planted in rows four to five feet apart; the plants standing two to three feet apart in the rows. They will not thrive in the hot interior valleys, being subject to sunburn. It is only practical to grow them in the coast counties and they attain perfection when they get the benefit of the cool moist air from the ocean.

Prune in winter, thinning out the new shoots when they are too thick and remove the old unfruitful wood. Thorough cultivation but not deep, is at all times advisable.

Black Naples. Very large and black; valuable for jams and jellies.

Cherry. Very large; deep red; fine for preserving; valuable market variety.

Crandall's Black Currant. A native black seedling of the wild currant and the only variety which will grow in the hot interior valleys. It is a vigorous grower and a heavy producer. Berries large to very large, one-half to three-quarter inch in diameter. A fine fruit and worthy of general cultivation.

Fay's Prolific. A new Currant, which has well sustained the claims of its disseminator. It is larger than the Cherry, has less acid, and is much more prolific.

La Versailles. A French variety of very large size, resembling the Cherry; of great beauty and very productive.

White Grape. Large; yellowish-white; valuable for the table; the finest of the white sorts. Very productive.

THE GOOSEBERRY.

The gooseberry is just as averse to growing in hot dry climates as the currant, and it therefore finds conditions favorable for its perfect development in localities where the climate is cool and foggy. All attempts to grow it here simply result in failure. In the mountains, however, at an elevation of 5,000 feet, the gooseberry thrives and produces an abundance of fruit.

Gooseberries should be planted and pruned in practically the same manner as currants.

AMERICAN VARIETIES.

Downing. Fruit good size; roundish oval; whitish-green; skin smooth; flesh soft and very good.

Oregon Champion. Berries very large; brownish-red color; very sweet and fine for table use and pies; bush strong, not very thorny; a very prolific bearer.

Smith's Improved. A seedling from Houghton; fruit quite large, and a stronger grower than the parent; light green; flavor sweet and excellent; very productive.

ENGLISH VARIETIES.

Berkeley. Immensely prolific; large and handsome; ripens very early; always commands a high price.

Industry. Regarded as the best English gooseberry yet introduced; the fruit is of the largest size; dark red and hairy; rich and agreeable.

Victoria. A new variety introduced from England, somewhat resembling Crown Bob, but with larger berries;

very strong grower, a late bloomer and sure cropper. Stands well in the lead as one of the best English gooseberries. It is of excellent flavor and is well suited for market purposes.

THE STRAWBERRY.

Adapts itself to a wide range of soils and climates, and in this respect it differs from the other members of the berry family.

Strawberries bear almost the entire year in several of the coast counties, and the same may be said of the plants in the interior valleys, where they are properly mulched and irrigated. In laying off ground for strawberries, the first essential point is to grade the plot so it has a gradual fall so that no part of the rows will become submerged in irrigating. There are a number of methods for laying out strawberry beds, but the one mostly followed by commercial growers is to plant in rows hilled up and about two feet apart with a ditch between for irrigating. Set the plants eighteen inches apart in the rows. The best time to set the plants is late in the fall after a heavy rain or any time in January or February. It is very import-

ant during the fruiting season to keep the plants in an active state of growth by irrigating, weeding and cultivating. In order to obtain large, highly flavored fruit, pinch off the runners as fast as they appear, and this will cause the plants to stock out as it were, on which the very finest strawberries may be expected the following season.

Brandywine. Large, roundish, conical; of fine quality; flesh firm; a valuable medium to late variety.

Jessie. Large, handsome; roundish, conical; dark red; firm and of good quality; plant vigorous and productive.

Longworth's Prolific. One of the best-known varieties in this State; an old favorite, always commanding a high price in the markets. Better adapted to the coast counties than to the interior valleys.

Marshall. One of the best all-purpose berries; very large, roundish; dark rich crimson; quality good, firm; a good market sort. The most popular and profitable variety in this section.

Sharpless. This old and well-known sort is still very popular, fruit large; bright scarlet; flesh light red; moderately firm, sweet, rich and of good flavor; very profitable for market and also for home use.

ESCULENT ROOTS.

ARTICHOKES.

THERE are two distinct types. The one so much prized by epicures and which is so extensively grown in California, particularly in the suburbs of San Francisco where it produces from early winter and practically through the entire summer, is the Globe Artichoke (*Cynara scolymus*). It is a gross feeder and must be well manured. In the interior sections of the State its flower buds do not appear until late spring.



.GREEN GLOBE ARTICHOKE.

The plant presents a very tropical appearance, and is therefore a valuable addition to any garden. The flower buds should be cut off as soon as they are well formed and before the scales open, otherwise they are tough and tasteless. Never allow the flowers to mature as the plants will dwindle down and die. Suckers should be taken during the winter months and planted in rows three feet apart, six feet between the rows.

Large Green Globe. This popular variety yields buds of large size, with scales very fleshy at the base and set in a broad fleshy receptacle. If buds are cut as soon as ready yields a succession of crops in the season.

JERUSALEM ARTICHOKE.

Jerusalem Artichoke. (*Helianthus tuberosus*). Radically different in its character of growth from the preceding, and will thrive on any well drained soil. The tubers should be cut to single eyes and planted in rows eighteen inches apart with rows four feet apart. The method of cultivation and hilling is practically the same as for potatoes. The tubers are not mature until the tops are frozen when they may be dug up and used for hog feed, or the animals may be turned loose to feed and root them out themselves. They produce enormously on good soil; with liberal cultivation and moderate irrigation, fifteen to twenty tons to the acre. This vegetable is highly prized by the French people, and in New Orleans, where it is extensively grown, it is prepared for table use by stewing, for making soups and as a salad. For the farmers of California it possesses so much merit that no farm having a few hogs should be without a patch of these tubers, which will supply feed during the winter months when all other foods are scarce and high.

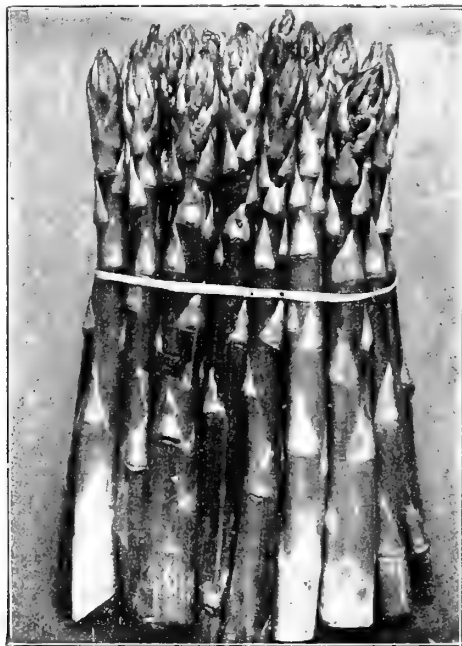
Purple. This is the old and well known variety with large tubers and of a rather rough exterior. An enormous cropper producing from fifteen to twenty tons to the acre. It is a great winter food for hogs and comes in when all other sources of supply are exhausted. The hogs are turned loose into it and they root the tubers out, eating them with great relish.

White. It resembles a potato more than an artichoke, having shallower eyes, much smoother skin than the preceding. By epicures it is regarded very highly. Produces heavily. No farm should be without a patch of these tubers.

ASPARAGUS.

Planting should be done in February or March. Mark out the rows six feet apart running two to three times in a row, getting the row as deep as the plow will turn the soil. Where the ground is hard loosen up the bottom of the furrow with a cultivator closed up. Set the roots three feet

apart in the rows and spread them out. Then cover with about four inches of soil and as the shoots grow gradually draw in the soil until the surface is level. Keep the ground in good condition by thorough irrigation and cultivation. Do not attempt to cut any asparagus until the plants have grown two years. After the frost has killed the tops, cut them off close to the ground and then follow with a plow, throwing the dirt away from the plants. In the spring, plow the earth back into the rows, leaving the plants under the ridge. The next season the bed will be ready for cutting and the method of handling should be in the same manner as has been recommended. Thorough manuring and a limited amount of stock salt will promote the growth of fine large tender stalks. Cutting should be done just as soon as the asparagus begins to show itself through the ground. In the interior valleys it is necessary to irrigate.



PALMETTO ASPARAGUS.

Conover's Colossal. A standard kind of first quality; tender and highly flavored.

Palmetto. Southern origin; earlier, larger, tender, and more regular in growth than the above.

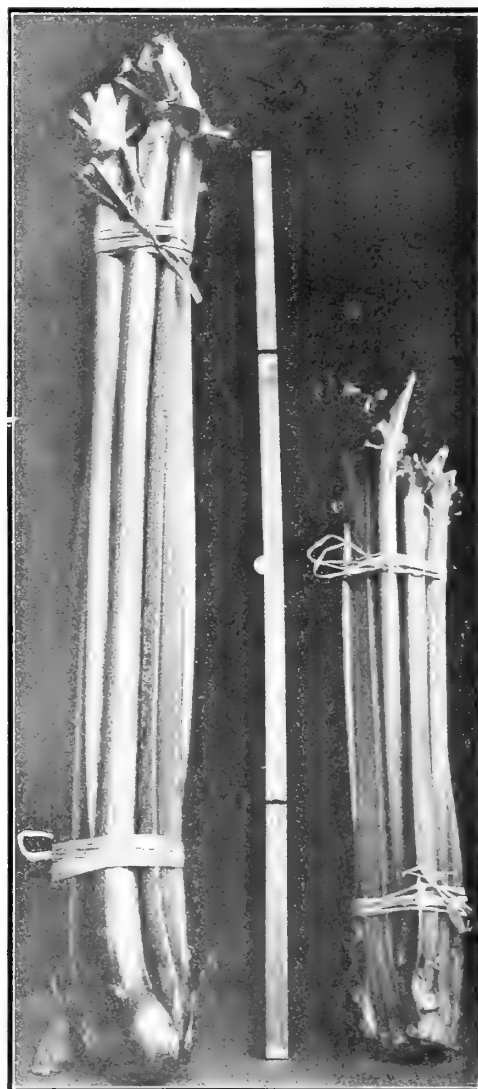
RHUBARB.

Rhubarb finds its most congenial conditions along the coast, although it can be successfully grown in the interior on deep rich soils. Before planting, manure the ground and then plow deep and get the soil well pulverized. Set the plants two to three feet apart, with four feet between the rows. The first year after planting, allow the plants to retain their leaves. The following winter give a liberal dressing of manure, covering same without injury to the tops.

Never strip the plant of all of its leaves and do not continue the cutting too late in the summer, as this will weaken the growth in the spring.

Burbank's Giant Crimson Winter Rhubarb. This is a new and distinct variety which must not be confounded with the Crimson Winter Rhubarb introduced a few years ago. In habit it is a robust grower and prolific producer of mammoth stalks, three times the size of the older sort, and can only be grown by divisions of its roots. It thrives amazingly during the winter months, is of fine flavor, juicy and smoothly acidulous to the taste, combining a flavor suggestive of pineapple and ripe loquats. Merits considera-

tion alike of the home garden and the commercial grower. Dealers predict for it a big demand in the eastern market during the winter months, hence it is destined to take first place in rhubarb culture wherever introduced. As Burbank pointedly says: "This new rhubarb is three times larger than the ordinary Crimson Winter, of which it is a sport of inestimable value, hence an introduction of the highest merit."



Burbank's Giant Crimson Winter Rhubarb.

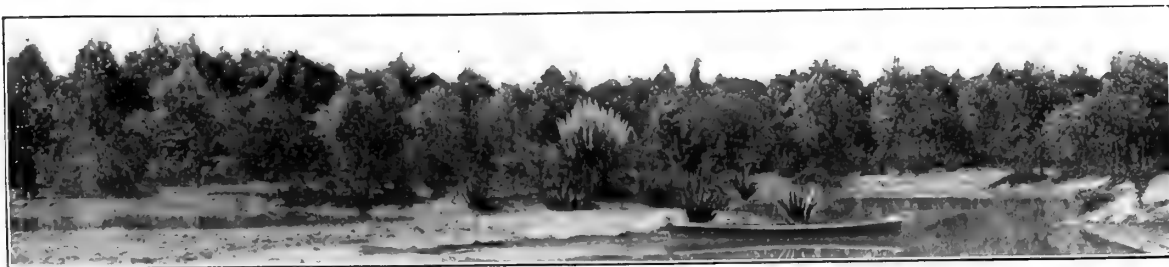
Burbank's Crimson Winter Rhubarb.

Burbank's Crimson Winter. A vigorous grower, producing medium-sized stalks of good length during the entire winter; of a pale, greenish, crimson color, blooms freely, which is easily remedied by topping; practically a perpetual producer of fresh, crisp, stalks of delicious flavor. Excellent for forcing under glass or in open ground,—especially adapted to the long seasons of California.

Myatt's Linnaeus. Large, early, tender and fine; the very best of all.

HOP ROOT. *Humulus Lupulus.*

Climbing vines valuable for ornament and yielding the hops used by brewers.



SCENE IN ROEDING PARK, FRESNO, CAL.

ORNAMENTAL DEPARTMENT.

ORNAMENTAL PLANTS.

NO country in the world offers better natural advantages for the grower of ornamental trees and shrubs than California. With a variety of climates embraced in a limited area from the torrid heat of the Colorado Desert to the balmy and equable climate of the southern coast counties, thence extending to the far northern counties, with their abundant supply of rainfall during the winter months, and where the temperature never goes above 70 degrees F., conditions prevail in which nearly every variety of tree or plant from the temperate, subtropical and tropical zones finds surroundings and soils conducive to successful culture.

California people are lovers of trees and are becoming impressed with the advantages which nature has bestowed upon them so bountifully, hence there is a steady and increasing demand for the very best that can be obtained in ornamental stock.

LAYING OUT GROUNDS.

If there is any one thing which adds to the beauty of a home, be it in the country or the city, it is attractive grounds. No farm can afford to be without a few trees and shrubs around the house, and it seems strange indeed that ornamental planting is not more observed by those who wish to make life in the country worth while. Money expended in this direction is well invested, not only from the fact of its creating pleasant surroundings, but because the beautifying of a place enhances its value and renders it salable, often at a handsome advance. Money cannot buy the satisfaction which one derives from the realization of watching the growth and development of ornamental vegetation.

A grave mistake made by many people is to plant haphazard without any prescribed plan, with the result that when the plants reach maturity, they appear to be out of place simply because they were not planted in a suitable environment to begin with. It is an easy matter to draw a rough sketch to a scale for modest grounds, and if submitted to us with data as to area, soil, climatic conditions, etc., we will, on request, make a selection of plants. Instances have come under our observation where thousands of dollars have been expended in an attempt to beautify extensive grounds, which, when acquiring age, possessed nothing to commend them to one's sense of the beautiful in plant life, simply because the planting had been done without a defined plan. Many handsome specimens, not being in harmony, were lost sight of entirely. It is not so much the plants themselves which add to the beauty and picturesqueness of a garden, as it is the grouping of them to obtain results. In order to secure this, a landscape gardener pictures in his mind the effect of his groups many years in the future, and his plans are drawn accordingly. Imitate nature, avoid having small beds with narrow walks with not enough of any one thing to bring out pleasing effects. Have a few open spaces planted to grass and obstruct the views of undesirable objects with tall growing shrubs and trees.

It will repay the intending home-maker who proposes to plant extensive grounds to engage a competent man to draw the plans and select the plants. It is just as important to do this as it is to engage an architect to draw plans for a house. We are in touch with some of the best landscape gardeners in the State, and should customers desire us to do so, we can have one of them visit any given place, draw plans and make a suitable selection for planting. When work of this nature is intrusted to us, it is our aim to do it at reasonable cost to our customers.

WHEN TO PLANT.

All varieties of deciduous trees should be planted in the dormant season from January to April, just as soon as sufficient rain has fallen to soften up the ground so that large enough holes can be dug to receive the roots readily. Evergreens transplant best from February to May, and in localities where there are no great extremes of heat during the summer months, planting may be done as late as June. Palms can be safely transplanted from September until June of the following year, but to successfully grow them during the winter months, they should never be dug fresh out of the ground from December to February, as they are dormant at that season of the year and will invariably "go back." For customers who desire an assorted order including palms, shipped in the winter months, we dig them in the fall of the year and store them in our palm house. By handling them in this manner they can be safely transplanted during the months of inactivity.

HOW TO PLANT.

No matter how carefully a deciduous tree is taken up, there are always some roots which will be bruised or broken, and these should be cut off to smooth sound wood. All other roots should have a fresh cut made on them and shortened in so they will fit into the holes readily without doubling up. Before planting the ground should be thoroughly plowed or spaded, and the holes should be dug sufficiently large to accommodate the roots without cramping. Far better to dig the holes too large and fill in with surface soil than to err by having them too small. It is a safe rule to set the trees a few inches deeper than they stood in the nursery rows.

Evergreens and palms are always taken up with a ball of earth and should be handled with care so as not to break the ball. In planting the rope used in tying the sacking to the ball should be cut, but the sack can remain or be allowed to drop to the bottom of the hole. The earth around deciduous trees should be well tramped and in the case of evergreens it should be well tamped with a bar; avoid at all times tramping on the ball itself as this will cause the soil to fall away, frustrating the very object of making the ball to begin with. After planting, water freely and the following day draw loose soil around the tree filling up the basin left for watering. In the case of deciduous trees of any size, no water at all will be required if it rains occasionally during the dormant period and the ground around the tree is well settled, until the growing season sets in, when not less than ten gallons should be given to a tree at intervals of three weeks apart. With evergreens proper precautions should be taken to

retain moisture in the ball of earth and it will be necessary to water more frequently. This can be determined by digging down and feeling the ball, if it is dry and hard, water should be given immediately and be applied often enough to prevent a repetition of this condition.

Never place manure or fertilizer of any kind in the hole, as the young and tender roots will be killed, and the plant otherwise injured, sometimes fatally.

PRUNING AT TIME OF PLANTING.

The cause of many trees failing to grow or start as early in the spring as they should, is directly traceable in many instances to the planter failing to cut his trees back. In taking up a tree from the nursery, at the very least calculation three-quarters of its roots are sacrificed, so that top-pruning is just as important or even more so than root pruning to insure the life of the trees to begin with, and promote a satisfactory growth during the growing season. Not more than five lateral branches should be allowed to remain, the lowest should not be closer than six feet from the ground and the highest nine feet. These branches should have two-thirds of their growth cut off at the very outside. Trees which were originally eighteen to twenty feet high, or even higher, should be cut back to at least ten feet from the ground when set, and smaller trees to eight feet.

Evergreens, and especially conifers, should have their branches shortened in, starting in at the base cutting away one-third of the growth up to the top. When completed the shape of the tree should resemble in appearance the outline of an acute triangle.

Other varieties should have their branches shortened and thinned out to secure good form. This pruning is necessary to reduce the amount of foliage, lessen evaporation, and to reduce the growth so that the remaining roots can retain life in the plant until such a time as it begins to develop, when root and top will grow in a corresponding ratio.

AFTER CULTURE.

Trees of all kinds require careful attention the first season after planting. The soil should be kept normally moist, and after each irrigation, well worked with a hoe or spade. In the hot interior valleys where the heat is intense, partial shading by building a skeleton frame and covering with burlap will do much to insure evergreens growing and becoming established.

Standard deciduous trees branching six to eight feet from the ground should have their bodies wrapped with burlap or paper the first and second years, to prevent sunburn.

PRUNING.

As far as possible, trees and shrubs should be allowed to assume a natural form. Nothing is more hideous than to see trees pruned to assume shapes and forms entirely foreign to them. The individuality of trees, is what renders a pleasing feature to our landscapes and makes them appeal to every lover of nature. In pruning the predominant idea should be to retain the natural shape of the tree, cut off straggling branches, thin out the head where it becomes too dense, and to remove dead wood. This applies to deciduous trees. In coniferous trees the branches should be allowed to touch the ground, removing none, except in such instances where there are two parallel leaders, when the weaker one should be cut out. Nothing is more unsightly than to see a majestic evergreen tree with the branches removed and exposing to sight an ugly gnarled stem.

SPECIMEN TREES.

Those who desire to obtain immediate results and do not wish to wait too long, may do this by purchasing specimen trees. These trees are carefully selected and are well furnished with lateral branches. It very often happens that such trees are not listed in our price list, or we may have new varieties, which are not catalogued. We will always be pleased to advise our customers just what we can supply in special sizes.

NEW VARIETIES.

It is our constant endeavor to keep pace with the demand for all classes of ornamental stock adapted to our conditions, and we are continually introducing new varieties and eliminating undesirable sorts. Our many years of experience places us in position to advise our customers intelligently as to what they should plant and what to avoid in their particular section.

CLASSIFICATION.

There is always so much confusion in the arrangement of names on account of some varieties having common names, while others only have the botanical, that we have concluded in all instances, to give the botanical name first in full faced type, synonyms in italic type and all common names in small cap letters. In the index the common name, if the plant has one, appears first followed by the botanical name in parenthesis. When there is no common name, the botanical name alone is given.

DECIDUOUS TREES

ACER. Maple.

This family comprises many of the most valuable trees for street and park planting. Many of the varieties are very valuable timber trees and when manufactured into lumber command the very highest prices, due to the fine grain and hardness of the wood. Some of the most highly prized varieties in the eastern states are not adapted to California conditions, and the beautiful Japanese types can only be grown in the coast counties where the air is cool and there is more or less fog during the summer months.

Acer campestre. ENGLISH OR CORK-BARKED MAPLE. A native of Europe attaining a height of 60 feet. A stocky tree, of compact, roundish habit, with rough corky bark full of deep fissures. An excellent variety in the interior as it does not sunburn.

A. macrophyllum. CALIFORNIA OREGON MAPLE. 100 feet. A very vigorous growing variety with large dark green and lustrous leaves, pale beneath, turning in autumn to bright orange and red; indigenous in this State and found growing wild mostly along creek bottoms. A grand shade tree doing well in the hot interior valleys, as well as in a cool climate.

A. monspessulanum. MONTPELLIER MAPLE. 25 feet. Native of central Europe; forms a handsome small tree with rounded head; leaves equally three-lobed. An interesting tree, thriving on very poor dry soils.

A. negundo. BOX ELDER OR ASH-LEAVED MAPLE. 70 feet. Large, fine spreading tree of rapid growth; foliage ash-like, smaller than in other maples; a fine avenue tree. Very frequently planted for wind-breaks and timber; it withstands both cold and drought.

A. platanoides. NORWAY MAPLE. Europe. 100 feet. A large handsome tree, with broad, deep green foliage, and of very compact growth, rendering it one of the most desirable varieties for the street, park or garden. A valuable variety in the interior valleys.

A. platanoides reitenbachii. REITENBACH'S PURPLE MAPLE. 50 feet. An excellent rapid growing and striking variety; foliage a beautiful greenish red in the spring; changing to purple in midsummer and to blood-red in the autumn. A great shade tree.

A. platanoides schwedleri. SCHWEDLER'S PURPLE MAPLE. 50 feet. A beautiful variety with very large deep bronzy red leaves and young shoots of the same color. A vigorous grower and a most effective ornamental tree.

A. pseudo platanus. SYCAMORE MAPLE. 60 feet. A handsome, rapid, upright growing tree, a native of Europe; leaves large, deep green and smooth; bark smooth and of ash gray color. Adapts itself to a variety of climates and has been found to be well suited to the hot interior valleys. A grand shade and avenue tree.

Acer saccharinum. (*A. dasycarpum*). SILVER OR SOFT MAPLE. 120 ft. A rapid growing tree of large size; irregular rounded form; foliage bright green above, silvery beneath; a favorite street and park tree, a very promising and distinct tree; should be extensively planted.

A. saccharum. SUGAR OR ROCK MAPLE. 100 feet. A well-known native tree of stately growth; valuable both for the production of sugar and for its wood, and also very desirable as an ornamental shade tree. Should never be planted in hot dry climates as it burns badly.

AESCULUS. Horse Chestnut.

A beautiful family of trees adapted to cool, damp climates. Added to the fact of their being magnificent park and avenue trees, they possess another attraction, viz., great effectiveness when in flower in May.



ALBIZZIA JULIBRISSIN AND BLOOM

Aesculus carnea. RED-FLOWERING HORSE CHESTNUT. 60-80 ft. A handsome tree of majestic habit; producing deep red flowers; very ornamental, and well adapted for lawn culture.

A. hippocastanum. EUROPEAN HORSE CHESTNUT. 60-80 feet. A handsome tree of regular form with showy foliage and covered in the spring with panicles of showy, white tinged, red flowers; a very ornamental tree.

ALBIZZIA. Mimosa Tree.

The hardiest member of this genus, and the only one which is deciduous. It is well adapted to Pacific Coast conditions and is said to be hardy as far north as Washington, D. C.

Albizzia julibrissin. ACACIA NEMU. Asia and Africa. 40 to 50 feet. A handsome shade and avenue tree; fine, feathery foliage; highly adapted to California, and unsurpassed for grace and beauty. Very hardy and when covered with its mass of pink feathery flowers in the early summer months, presents a beautiful appearance.

ALNUS. Alder.

Prefers moist damp situations and when planted in such locations makes a beautiful shade and ornamental tree.

Alnus glutinosa. EUROPEAN OR COMMON ALDER. 70 ft. A remarkably rapid-growing tree, with roundish, wedge-shaped foliage; well adapted to moist situations.

A. glutinosa imperialis. IMPERIAL CUT-LEAVED ALDER. A stately, vigorous growing tree, of graceful habit, with large and deeply lacinated foliage; a grand lawn tree.

AMYGDALUS. Almond.

These perfectly hardy, free flowering trees, blossoming long before the foliage appears in the spring should have a place in every garden.

Amygdalus davidiana alba. WHITE-FLOWERED ALMOND. This is the first tree to bloom in the spring; the flowers are large, single white and appear before the leaves. Very desirable on this account. When clothed with bloom it is very beautiful.

A. davidiana rubra. PINK-FLOWERED ALMOND. Similar to the above but with single rose-colored flowers.

BETULA. Birch.

As a class, very hardy trees growing quickly and doing well even in exposed situations. Very beautiful and picturesque. Their graceful habit, silvery bark, pendulous airy branches, render them general favorites. Very handsome as single specimens on the lawn or as avenue trees.

Betula alba. EUROPEAN WHITE BIRCH. Europe to Japan. 80 feet. Remarkable for its elegance; very graceful with silvery bark and slender branches; quite erect when young, but afterwards assumes an elegant drooping habit.

B. alba atropurpurea. PURPLE LEAVED BIRCH. 40 feet. A very effective variety with leaves of a rich purple above and a lustrous metallic hue beneath; branches slightly pendulous.

B. fastigiata. PYRAMIDAL BIRCH. 30 to 40 feet. Of elegant pyramidal habit like the Lombardy Poplar; bark silvery white. Very handsome and ornamental.

B. nigra. RED OR RIVER BIRCH. An American species attaining a height of 60 to 70 feet. Graceful with slender, numerous branches and remarkable for its ragged, reddish brown bark.

B. populifolia. AMERICAN WHITE BIRCH. 40 feet. A medium sized tree, with papery, white bark and slender pendulous branches; leaves nearly triangular, dark green lustrous, turning pale yellow in autumn.

B. pendula laciniata. CUT-LEAVED WEEPING BIRCH. A popular very attractive pendulous tree. Its tall, slender, graceful drooping branches, delicately cut foliage and silvery white bark, present a combination of characteristics rarely met with.

BROUSSONETIA. The Paper Mulberry.

A beautiful tree and rather remarkable on account of its cylindrical catkins. The inner bark is used in China and Japan for the manufacture of a fine, delicate, quality of paper. Will thrive in cities in localities where the smoke and gases would have a bad effect on most trees.

Broussonetia papyrifera. PAPER MULBERRY. China and Japan. 30 to 50 feet. A bushy-headed tree of rapid growth, with light green, downy leaves; a fine tree for city streets; fruit round and covered with small succulent red seeds, not edible.

CARAGANA. The Pea Tree.

Well adapted for grouping, of a dwarfish habit. When covered with its pea-like flowers, it is very effective.

Caragana arborescens. SIBERIAN PEA TREE. A native of Siberia and Manchuria. 20 feet. Very ornamental; flowers yellow; leaves abruptly pinnate; tree of medium growth.

CARPINUS.**The Hornbeam.**

Will grow in almost any soil. The wood is very hard and close grained and much used in making tools and other small articles.

It stands pruning well and is very valuable for high hedges.

Carpinus betulus. EUROPEAN HORNBEEAM. Specimen trees will attain a height of 50 to 70

feet. Of upright growth; leaves are purplish in the spring, green later on and turn yellow in the fall. It is regarded as one of the best tall hedge plants of Europe, and when properly pruned, keeps its form well and is covered with a dense growth of foliage.

CASTANEA. The Chestnut.

Finds conditions favorable for its perfect development in sandy and loamy soils, and will do well in the interior valleys where water can be applied when necessary. Subject to sun-scald in hot dry climates and should be headed low. For the description of other varieties refer to chestnuts in the Fruit Department.

Castanea sativa. (*C. Vesca*). SWEET OR SPANISH CHESTNUT. A native of Europe 50 to 70 feet. A very ornamental tree, desirable for lawns, valuable also for its fruit which is very much larger than the American variety.

CATALPA.

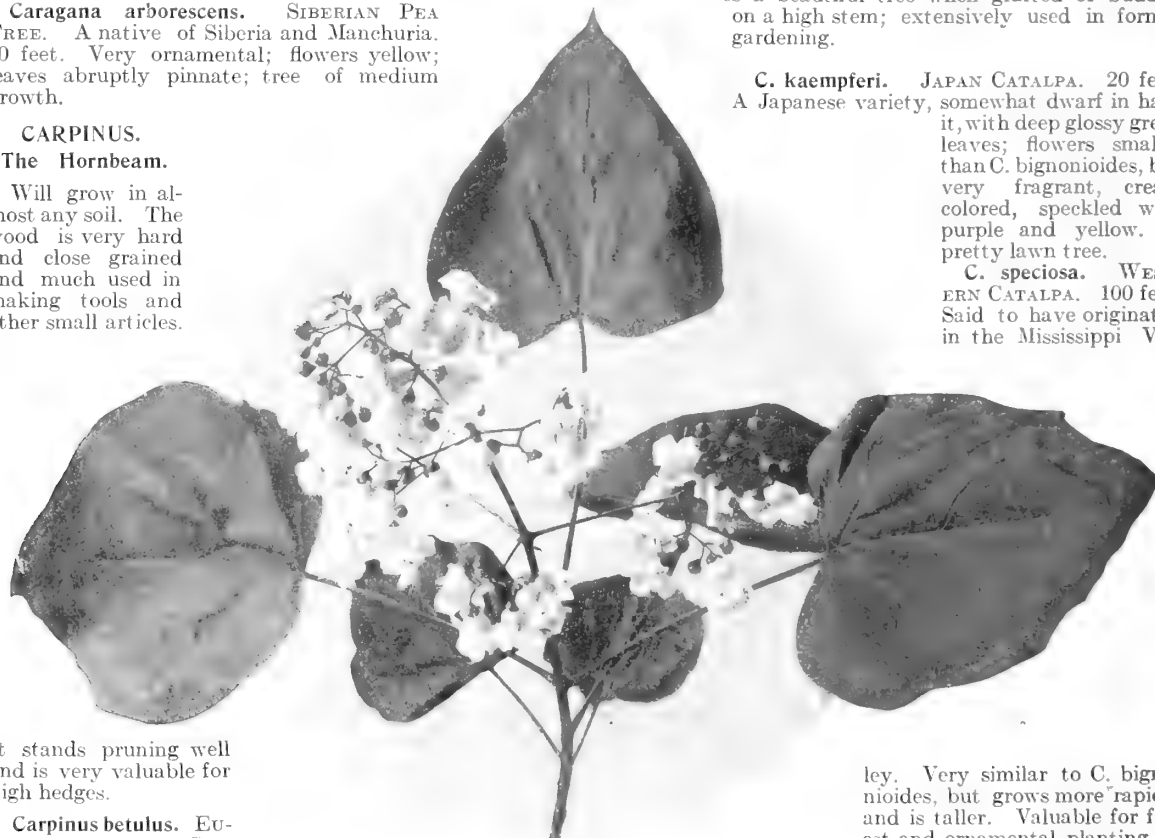
Highly ornamental trees with large, bright green foliage and beautiful white or yellowish flowers in large showy panicles, followed by long slender seed pods. The wood is very durable in the soil, and therefore much valued for fence posts and railway ties. They are effective tropical looking trees and adapt themselves to almost any soil.

Catalpa bignonioides. (*C. syringajolia*). COMMON CATALPA. S. United States, 40 feet. A rapid-growing, spreading, irregular tree, with large, heart-shaped leaves; remarkable for its clusters of white and purple fragrant flowers in spring.

C. bungei. CHINESE CATALPA. 10 to 15 feet. A remarkable species, forming a dense, round, umbrella-like head. Makes a beautiful tree when grafted or budded on a high stem; extensively used in formal gardening.

C. kaempferi. JAPAN CATALPA. 20 feet. A Japanese variety, somewhat dwarf in habit, with deep glossy green leaves; flowers smaller than *C. bignonioides*, but very fragrant, cream colored, speckled with purple and yellow. A pretty lawn tree.

C. speciosa. WESTERN CATALPA. 100 feet. Said to have originated in the Mississippi Valley.



CATALPA SPECIOSA.

ley. Very similar to *C. bignonioides*, but grows more rapidly and is taller. Valuable for forest and ornamental planting.

CELTIS. The Nettle Tree.

Valuable as shade trees or as single specimens on the lawn, mostly with wide spreading head and light green foliage having the appearance of a nettle leaf, hence the name. The straight grained wood is light and elastic and is much used for carving and small articles of furniture.

Celtis australis. A native of the Mediterranean region. 60 feet. A most valuable ornamental tree, with rather slender branches, and producing long, dark-purple, sweet fruits in the fall. Little known but worthy of more attention on account of its rare beauty and its adaptability to many soils and various climatic conditions.

C. occidentalis. HACKBERRY OR AMERICAN NETTLE TREE. A rare tree of large growth, occasionally 120 feet high, with numerous slender branches which spread out horizontally; thick, rough bark; apple-like foliage but more pointed and much more heavily serrated; produces a small edible drupe of an orange red color, when ripe. A most desirable tree for street planting. Does splendidly in this valley.

CERASUS. The Bird Cherry.

Tree of medium size and desirable for street or avenue planting.

Cerasus padus. BIRD CHERRY. Native of Europe and Asia. A medium sized, wide spreading tree, covered with long racemes of white flowers in the spring, and bearing a small black fruit resembling the wild cherry, but nauseous to most palates. When infused in whisky or gin, it is said to greatly improve these spirits; very ornamental and thrives well in the San Joaquin Valley.

CERCIS. The Judas Trees.

These striking ornamental trees should have a place in every garden of any size. They are loaded with a mass of pea-shaped blossoms in the spring and the effect is so entrancing when once seen in all their glory, that the sight is not soon forgotten. They can be used either in shrubberies or as single specimens on a lawn. They will grow well in any ordinary good soil.

Cercis canadensis. AMERICAN JUDAS TREE OR RED BUD. United States. 15 to 20 feet. A medium sized tree, with perfect heart-shaped leaves. It derives its name of Red Bud from the profusion of delicate reddish-purple flowers with which it is covered in the early spring before the foliage appears; a very fine ornamental tree, thrives well in this valley.

C. siliquastrum. EUROPEAN JUDAS TREE. 40 feet. A handsome low tree with a flat spreading crown; strikingly beautiful in the spring when covered with its numerous bright, purplish pink flowers. Leaves heart-shaped, bluish green.

C. siliquastrum album. WHITE FLOWERING JUDAS TREE, S. Europe, 40 feet. Tree of the same habit as the above, but flowers are pure white. The wood is very beautiful and veined with black; takes an excellent polish and may be utilized for many purposes.

CHIONANTHUS. The Fringe Tree.

Ornamental shrubs or low trees with dark green leaves and very effective showy flowers, which appear in the late spring. With a background of evergreens, the effect of the showy flowers is very much intensified.

Chionanthus virginica. WHITE FRINGE TREE. A small native tree of roundish form, with large, dark green foliage and producing loose panicles of pure white flowers, having narrow, fringe like petals; blossoms in April.

CITRUS. The Hardy Orange.

Oranges are always associated with tropical or semi-tropical regions but this extremely hardy variety will grow as far north as Washington, D. C. In California it does not lose its leaves entirely. As specimen plants they are very attractive, particularly in the early spring when covered with masses of fragrant white flowers. As a hedge plant it has few equals, making an impenetrable barrier for man or beast. It stands pruning well.

Citrus trifoliata. TRIFOLIATA ORANGE. A small tree armed with very strong, stiff thorns one and one-half to two inches long; producing fruit of a golden yellow color somewhat larger than a walnut, pulp dry, sour and very bitter. May be used for preserves or marmalade. For hedges it has few equals, nothing can penetrate it and it never suckers. As a stock for oranges to be grown in tubs it is superior to all others and it is said to exert a decided influence on making the edible types of oranges more hardy and also causes the fruit to mature earlier.

CLADRASTIS. The Yellow Wood.

Hardy ornamental trees of medium size, with showy flowers, and handsome foliage, turning bright yellow in

fall. They will thrive in almost any soil, but grow best in a loamy moist soil.

Cladrastis tinctoria. (*Virgilia lutea*.) YELLOW WOOD. 50 feet. One of the finest of American trees; of moderate growth; foliage of a light green color; flowers pea-shaped, white, sweet-scented, appearing in May in great profusion, in long drooping racemes, covering the tree. A beautiful specimen tree for the lawn. The wood yields a clear yellow dye.

CRATAEGUS. The Hawthorns.

The Hawthorns grow in almost any soil and rank very high among flowering trees. They are particularly well adapted for beautifying small grounds and for grouping. There is quite a variation in the shape of the foliage, and the flowers will vary in color from pure white to deep carmine. The showy fruit ripening in autumn makes them highly attractive and ornamental at that time. They can be trained into many forms by following out a systematic method of pruning.

Crataegus monogyna. ENGLISH HAWTHORN. A shrub or small tree with spreading, spiny branches, native of Europe. Flowers single, white, borne in compound, many flowered corymbs. Fruit scarlet, very persistent.

C. monogyna alba plena. DOUBLE WHITE THORN. Has small, double white flowers; a highly ornamental variety on account of its lustrous green leaves and striking flowers.

C. monogyna pauli. PAUL'S DOUBLE SCARLET. Small tree with spreading branches. Flowers in clusters, very double, large and full, and of a deep crimson color.

C. monogyna punicea. SINGLE PINK THORN. Flowers in clusters, single, varying in color from pink to rose.

C. monogyna pyramidalis. PYRAMIDAL THORN. Grows in the shape of a pyramid hence its name. A good grower with fine foliage and single white flowers.

DIOSPYROS. The Persimmon Tree.

This tree has already been described in the "Fruit Department," but its value as an ornamental tree cannot be overlooked, and although of moderate growth, its large luxuriant, glossy green leaves, followed by its very persistent fruits, remaining on the tree until the late frosts occur in the winter, entitled it to a place among the ornamentals.

Diospyros virginiana. NATIVE PERSIMMON. 50 to 75 feet. Tree with round-top head and spreading, often pendulous branches. Fruit an inch or over in diameter, pale orange yellow, with a bright cheek when ripe. The flesh remains astringent until fully ripe or frosted.

FAGUS. The Beeches.

As a class they rank among the most beautiful and magnificent of deciduous trees. Their rich, glossy foliage and elegant habit causes them to rank very high as single specimens on the lawn or for grouping among other trees. The branches are very graceful and of a drooping habit. Require damp cool summer climates to grow to perfection.

Fagus americana. AMERICAN BEECH. 80 to 100 feet. A large stately tree with smooth bark, spreading branches and symmetrical head. The smooth, light-colored bark makes this tree very handsome even during the winter months. Unexcelled for lawn or landscape.

F. sylvatica. EUROPEAN BEECH. 60 to 80 feet. This is unquestionably a grand ornamental tree whether used as a specimen tree or on the lawn. It forms a round compact head and its foliage is of a deep, dark glossy green. In general habit it resembles the former, but is more compact and upright in its growth.

Fagus sylvatica purpurea. PURPLE BEECH. 80 feet. This magnificent tree with its deep purple foliage in the spring, changing to crimson in the fall, stands almost alone in its class as not only one of the most charming and effective trees for grouping, on account of its marked foliage contrast when interspersed among other trees, but also for its effective beauty as a specimen or lawn tree.

FRAXINUS. The Ash.

The Ashes are very important forest trees and are valuable for avenue and park purposes, and grow mostly into tall broad headed trees, with light green foliage, turning yellow or deep purple in the fall. The wood is very valuable, being tough and straight grained; it is very largely used in the manufacture of carriages, for tools and for the interior finish of houses. Its favorite situation is any moderately damp soil.

Fraxinus americana. AMERICAN WHITE ASH. 120 feet. A tall, very straight tree with broad round head and dense foliage of a dull bluish-green color. A magnificent avenue tree, adapting itself readily to California soils and climatic conditions.

F. excelsior. EUROPEAN ASH. 100 feet. A beautiful majestic tree of rapid growth, with spreading head and gray pinnate leaves and black buds. Very similar to the preceding except that the foliage is somewhat smaller and of a deeper green. Suits our conditions admirably.

F. lanceolata. (*F. viridis*). GREEN ASH. 60 feet. A tree of medium size with slender, spreading branches forming a shapely, round top head. Leaves compound with 7 to 9 leaflets, bright green, fading in autumn to tones of yellow and brown. Very desirable for avenues requiring trees of moderate growth and as a specimen tree.

F. ornus. EUROPEAN FLOWERING ASH. Of moderate growth, 25 to 30 feet. Flowers greenish white, fragrant, fringe-like, produced in early May in large clusters on the ends of the branches. Young branches purplish or livid with yellow dots.

GLEDITSCHIA. The Honey Locust.

These very striking ornamental shade and avenue trees, although they will adapt themselves to almost any soil, have never been planted as extensively as they deserve to be in California, where conditions are even more favorable for them than in the middle west and eastern states.

Gleditschia japonica. JAPANESE LOCUST. A native of China and Japan. 50 to 60 feet. Never becomes very tall. Its numerous sinu branches, dark lustrous green compound leaves and its long, flat twisted pods, combine to make it very effective whether planted singly or in groups.

G. triacanthos. A strange but striking ornamental tree, with large branched reddish spines on trunk and branches; forms a broad graceful, rather loose head, with finely pinnate glossy green foliage; the greenish flowers appearing in racemes in the early summer are followed by flat ornamental bean-like pods eight to ten inches long. As avenue trees they are very picturesque.

G. triacanthos inermis. THORNLESS HONEY LOCUST. Very similar to the preceding, but with more airy habit of growth and practically without thorns.

GYMNOCLADUS. The Coffee Tree.

So little known that its value as a shade tree has never been fully appreciated. It should be planted in a deep, loamy soil. It is quite interesting even in the winter months, for it retains its seed pods during the season of dormancy, thus adding to its attractiveness.

Gymnocladus canadensis. KENTUCKY COFFEE TREE. U. S. 50 to 60 feet. A very ornamental, hardy tree of rapid, upright growth, with rough bark, blunt and cane-like branches, devoid of small twigs and with feathery

bluish-green foliage. The name Coffee Tree comes from the fact of its seeds having been used as a substitute for coffee by the early settlers.

JUGLANS. Walnut.

These majestic trees of exceedingly rapid growth are too well known to require much description. Their value for avenue, shade and as single specimens is well known. They will grow well in most any soil but do best in a moderately moist soil. They have massive, deeply furrowed straight trunks, with spreading, airy tops. The wood is very valuable, is susceptible of receiving a beautiful polish and is much used for cabinet making and for interior finish. A plantation of these trees would bring handsome returns within a period of twenty years for the wood it would furnish.

Juglans californica. CALIFORNIA BLACK WALNUT. 100 to 120 feet. A rapid growing native tree with spreading branches and with very dark and deeply furrowed bark. Foliage dark green, retaining its bright fresh appearance even in the driest of climates. Will do well in any fairly deep soil. Nut flattened, very hard, smooth, kernel of good quality.

J. nigra. AMERICAN OR EASTERN BLACK WALNUT. 75 to 100 feet. A very lofty tree of symmetrical form and majestic habit. Bark grayish black and somewhat furrowed. Leaves light green, rough, serrated and somewhat downy. Nuts globular, very hard and deeply furrowed. Much slower grower than the preceding, more upright and readily distinguished from it by the difference in the foliage and the color of the bark. As an avenue tree it has few equals.

KOELREUTERIA. The Varnish Tree.

Koelreuteria paniculata. VARNISH TREE. China and Japan, 20 to 30 feet. A charming small tree, with glossy, divided foliage and large, terminal panicles of showy, golden yellow flowers; a most desirable tree for the lawn, particularly valuable for its brilliant golden blossoms produced late in the season when few if any trees are in bloom.

LIQUIDAMBAR. The Sweet Gum.

This is unquestionably one of the finest of American trees, its very beautiful habit, the glossy green color of its star-shaped foliage have made it universally esteemed in the Southern States. It is but slightly known on the Pacific Coast. There is no reason why it should not be generally planted for there are but few trees in the deciduous line which are more attractive.

Liquidambar styraciflua. SWEET OR STAR-LEAVED GUM. BILSTED. 80 to 120 feet. An elegant tree somewhat resembling the Maple, but having alternate leaves, star-shaped and of a beautiful glossy green color in the summer, changing towards the autumn to a bright red. Makes a fine symmetrical tapering head and is of moderate growth. A beautiful tree at all stages, but more so in the fall with its brilliant and brightly colored leaves.

LIRIODENDRON. The Tulip Tree.

Liriodendron tulipifera. TULIP TREE. Eastern U. S. and China, attains a height of 150 feet. A magnificent rapid growing tree of tall pyramidal habit, with light green, glossy, fiddle shaped leaves, and greenish yellow tulip like flowers. Known to lumbermen as Poplar and white-wood.

MAGNOLIA. The Magnolias.

These highly ornamental medium sized trees with their rich and brilliant foliage, and their lavish display of fragrant many hued flowers, are worthy of a place in every garden of any size. Planted in groups, their effect in the early spring with their brilliant colorings and their rich fragrance is grand beyond description.

They do not adapt themselves to hot, dry climates, sun-burning badly unless protected for a few years with a burlap shade during the summer months. Their striking flowering effects will repay this slight additional expense when they reach their blooming period.

Magnolia acuminata. CUCUMBER TREE. 90 feet. A majestic, pyramidal-growing tree, with large, conspicuous leaves and yellowish-white flowers; fruit, when green, resembling a cucumber, hence the name.

M. soulangeana. SOULANG'S MAGNOLIA. A large shrub or small tree; leaves obovate, dark green, expanding after the flowers have fallen. Flowers large, cup-shaped, white, more or less suffused with rosy pink and quite fragrant.

M. stellata. STARRY MAGNOLIA. A beautiful dwarf species, producing a wonderful wealth of starry, semi-double fragrant flowers, fully three inches across in the early spring. Earlier than any other Magnolia.

MELIA. The Umbrella Tree.

The name Bead-tree has been given to the species of this genus on account of the use made of the seeds in Catholic countries, where the nuts are threaded for beads, having a natural perforation through the center.

M. azedarach umbraculiformis. TEXAS UMBRELLA. 40 feet. The first tree that came to notice was found near San Jacinto, Texas. Entirely different from the Pride of India; Chinaerry tree; the branches erect, and in a manner radiating from the trunk, the drooping foliage giving the tree the appearance of a gigantic umbrella. It is of striking beauty, and is one of the handsomest shade trees; shade very dense; foliage bright dark green; produces lilac-colored flowers, succeeded by a fruit with an external pulp, and a hard nut within. We can recommend this tree as something extraordinarily fine; one of the best trees for this valley, thriving and growing luxuriantly in almost any soil.

MORUS. The Mulberries.

The Mulberry trees are natives of the temperate regions in the Old and New World. Their widespread introduction into the United States dates back from the time of the silk worm mania about a half century ago when it was asserted that silk was to take the place of cotton. Only a few of the varieties produce fruit of any size. The trees are rapid dense growers and are popular for planting in hog pastures and chicken yards, the animals relishing the fruits keenly. A few trees in the vicinity of a cherry orchard are almost a sure protection from the birds as they will invariably go to the Mulberries first.

Morus alba. WHITE MULBERRY. 50 feet. This is the common mulberry so extensively grown in Europe and Asia for its leaves which are used for feeding silk worms. Tree grows very rapidly and has medium sized, glossy green ovate leaves. Fruit small, pale white.

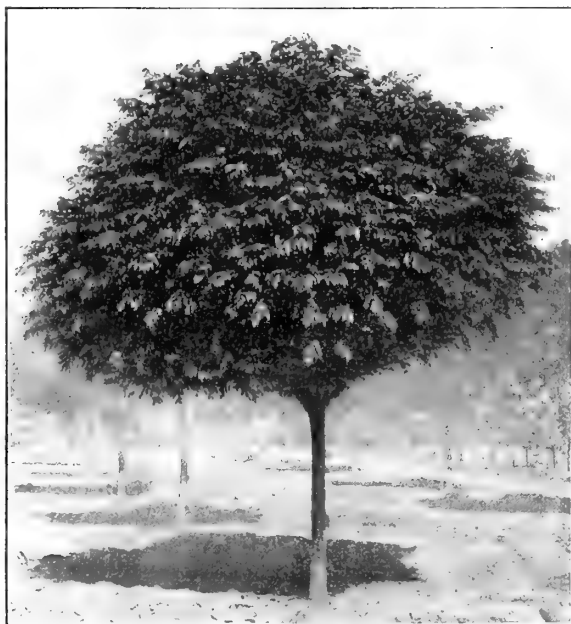
M. alba tatarica. RUSSIAN MULBERRY. 50 feet. Brought to notice by the planting of them by the Russian Mennonite Colonists of the Northwest; valuable for its timber. Tree of a spreading habit, rapid growth and conspicuous for its rather large dark green, glossy leaves. Fruit of little value.

M. multicaulus. China. 40 feet. A strong growing small tree, with dull very large, thin roughish and long pointed leaves, very rarely lobed, and bearing small insipid fruits. In China it is more widely planted than any other variety, and is considered to be among the best in silk producing countries.

M. nigra. PERSIAN OR ENGLISH MULBERRY. 30 feet. A variety of slow growth, but producing the largest and finest fruit of all Mulberries; very productive; the fruit is large, black, one and a half inches long; very juicy, aromatic, with a sub-acid flavor; ripens from June to October; good for preserves.

Morus rubra. DOWNING'S EVERBEARING MULBERRY. 75 feet. A very rapid grower and valuable as a shade tree; produces a good fruit.

M. rubra. LICK'S AMERICAN MULBERRY. 60 feet. Originated by the late James Lick; fruit large, black and of exquisite flavor; tree a strong, thrifty grower.



MELIA AZEDARACH UMBRACULIFORMIS. TEXAS UMBRELLA TREE.

M. rubra. NEW AMERICAN MULBERRY. 60 feet. A rapid-growing tree, with fine, large leaves; very handsome and valuable as an avenue or shade tree; fruit large and black.

PAULOWNIA. The Empress Tree.

This is a remarkable tree on account of its handsome large, blue flowers and exceedingly large leaves. During the winter the clusters of flower buds for the ensuing year, together with the seed-pods of the past season, hang side by side imparting a peculiar aspect. It attains its greatest perfection in deep moist soils.

Paulownia imperialis. EMPRESS TREE. Japan. 40 feet. A rapid, tropical looking tree, with enormous, round leaves; produces large clusters of purple, trumpet-shaped flowers in the spring. If the tree is cut down to the ground each winter, new suckers will shoot up from fifteen to twenty feet high, with leaves of immense size and splendid tropical effect.

PERSICA. The Flowering Peaches.

There are but few trees which are more beautiful in the early spring than the double flowering varieties of peaches. They blossom in April and the branches covered with a mass of beautiful highly colored flowers, long before the leaves appear, making them very enchanting and most attractive. Planted in groups with an assortment of colors, they are very pretty and effective. Should have a place in every garden. They attain a height of from 15 to 20 feet.

Persica vulgaris alba plena. DOUBLE WHITE-FLOWERED PEACH. Flowers large, very double, pure white; superb.

P. vulgaris rosea plena. DOUBLE ROSE-FLOWERED PEACH. Flowers very double, fringed, rose colored like small roses. Very pretty.

P. vulgaris camelliaeflora plena. Very large, rose colored flowers.

Persica vulgaris sanguinea plena. DOUBLE RED-FLOWERED PEACH. Flowers semi-double, bright red; superb.

P. vulgaris purpureis. PURPLE OR BLOOD-LEAVED PEACH. Foliage of a deep, blood-red color; valuable on account of its handsome foliage and rapid growth. The tree should be cut back severely every winter.

PHELLDENDRON. The Chinese Cork Tree.

Phellodendron amurense. CHINESE CORK TREE. A very hardy tree from Manchuria. 60 feet. It has thick, corky bark and elegant pinnate foliage, three to four feet long. In general appearance and rapidity of growth it resembles the *Ailanthus*.

PLATANUS. The Plane Trees.

The ever increasing demand for this tree, particularly the Oriental variety, bears ample testimony to its value as a shade, ornamental and avenue tree. Its exceedingly rapid growth, shapely appearance and its clean greyish-white bark have all contributed to bring it very prominently to the front rank. Thrives on any soil, but prefers deep moist soils, and when planted in such locations, its growth is astonishingly rapid. The trees in Asia Minor grow to be 100 feet high with a corresponding spread of branches.

Platanus occidentalis. BUTTONWOOD OR AMERICAN PLANE. 100 feet. A well known tree and quite common throughout the United States; branches spreading. Leaves heart-shaped at base, the short lobes sharp pointed.

P. orientalis. ORIENTAL PLANE, EUROPEAN SYCAMORE. S. E. Europe to India, 100 feet. A rapid, erect-growing tree, with bright green foliage; far superior to the common American Sycamore; thrives very well in this valley, and is a desirable avenue, street or park tree. More extensively used in southern Europe for avenue and shade purposes than any other variety. A grand tree.

POPULUS. The Poplars.

Poplars are very rapid growing trees and thrive under a great variety of conditions as regards soil, but do best in damp situations and along watercourses. Their leaves are bright among other trees of heavier foliage, and give to a group a sprightly air. They are well adapted for windbreaks and are very effective when planted in groups by themselves.

They are beautiful objects in spring, with long, drooping catkins, and also attractive throughout the growing season by reason of their trembling leaves.

Populus alba bolleana. BOLLES SILVER POPLAR. 100 feet. Of recent introduction; a very compact, upright grower, with glossy leaves, green above and silvery beneath; one of the most desirable poplars.

P. balsamifera. BALSAM POPLAR. 60 feet. A medium sized tree, with stout erect branches, forming a narrow pyramidal head. Often planted for the delightful resinous odor of the buds.

P. balsamifera candicans. BALM OF GILEAD. 80 feet. A handsome tall tree with spreading branches, forming a comparatively broad crown. Of remarkably rapid growth, with large glossy green foliage. Starts earlier in the spring than any other variety.

P. carolinensis. CAROLINA POPLAR. A very distinct tree making an upright pyramidal head; leaves large, glossy deep green. Valuable for avenue planting. A very rapid grower.

P. deltoides. COTTONWOOD. 75 feet. A very rapid growing tree with a spreading head. Bark is deeply furrowed. For quick shade it is invaluable. It adapts itself to almost any situation, but it is very partial to moist situations. Our trees are all grown from cuttings taken from trees having only staminate or male blossoms so that the cotton which flies in the air and makes this tree

so objectionable in the early summer months, is eliminated.

P. deltoides vangeerti. VAN GEERT'S GOLDEN POPLAR. 50 feet. One of the best of yellow-leaved trees. Has fine golden yellow foliage, retaining its brilliancy throughout the season; effective in masses.

P. nigra fastigiata. LOMBARDY POPLAR. 100 feet. This is one of the characteristic trees in many parts of Italy



PLATANUS ORIENTALIS. EUROPEAN SYCAMORE.

and it is from the Italian province, Lombardy, that its common name is derived. Probably a native of Asia. A very rapid, erect growing tree with a tall spiry form and particularly striking and picturesque when grouped among other trees.

PRUNUS. The Plums.

Medium sized growing trees and used very effectively in grouping with other trees and shrubs. The Purple-leaved Plum is especially adapted for use in formal gardens and producing striking foliage effects.

Prunus pissardi. PURPLE-LEAVED PLUM. Tree of medium size; wood and leaves dark purple; the fruit from its formation is also purple until it ripens; introduced from Persia. A singular, but very striking ornamental tree.

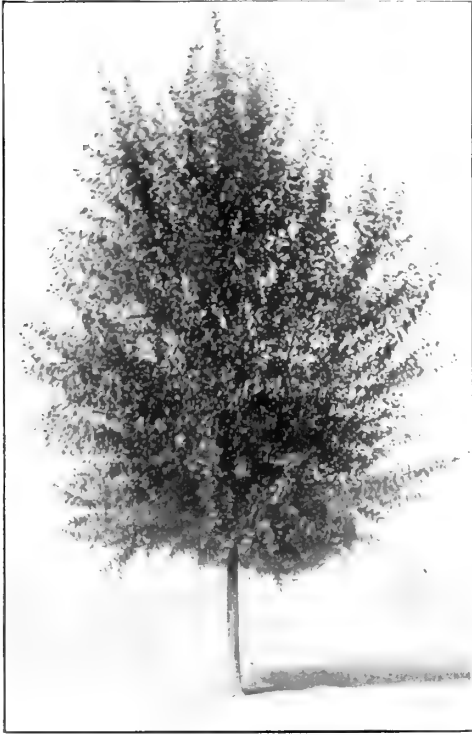
P. triloba. DOUBLE-FLOWERING SLOE. A low spreading tree or large shrub from Japan, covered in spring small, double daisy-like white flowers, succeeded by small dark purple fruit.

PTELEA. The Hop Tree.

Ptelea trifoliata. HOP TREE. U. S. 25 feet. A small, round headed tree, with short spreading erect branches and glossy green foliage. Flowers small, greenish white, followed in the fall by wafer like fruits, the seed being surrounded by a papery marginal wing, remaining on the trees until late in the winter. Very desirable for parks and gardens.

PTEROCARYA. The False Walnut.

This rare but grand tree when once known will become one of our most popular trees as a single specimen or for avenue purposes. It forms an immense spreading clean topped head, with large compound leaves and long pendulous racemes of curious winged fruits. A magnificent specimen of this tree is growing at Stockdale, the property of Wm. S. Tevis, Esq., Bakersfield, California.



POPULUS BALSAMIFERA CANDICANS. BALM OF GILEAD.
SEE PAGE 58.

Pterocarya fraxinifolia. FALSE WALNUT. Western Asia. 60 feet. An exceedingly handsome tree with spreading branches, leaves rich, dark green, consisting of 11 to 15 leaflets. Fruits light green, drooping in graceful racemes 12 to 15 inches long. A most interesting tree.

QUERCUS. The Oaks.

This grand family of trees noted for their great longevity comprises a vast assortment of varieties. Our selection consists of the very best sorts suited to the climatic conditions of California. Although of somewhat slow growth, when they attain size, their massive, rugged stems and twisted branches furnish an element of picturesqueness making them most desirable for planting as single specimens, also to bring out the best results in landscape effects planned on a large scale. The value of the wood for furniture, flooring and for innumerable other purposes is too well known to require elaboration here.

Quercus aegilops. VALLONEA, OR VELANI OAK. A native of Asia Minor and the Grecian Archipelago. 50 to 75 feet high, with fully the same spread of branches. A magnificent shade tree remarkable for its enormous cups from an inch to two inches across. The cups are exported in large quantities from the Levant, being in great demand for tanning purposes. Recently introduced by us.

Q. cerris. TURKEY OAK. South Europe. 120 feet. A rapid symmetrical grower, with short spreading branches, forming a broad, pyramidal head; leaves dark

green, finely lobed and fading in autumn to brown and persisting on the branches sometimes until spring. Acorns embraced in a mossy cup.

Q. coccinea. SCARLET OAK. 80 feet. A rapid-growing pyramidal tree; especially remarkable in the autumn, when the foliage changes to a bright scarlet. A tree valued chiefly for its gorgeous autumnal tints. Very symmetrical in outline.

Q. densiflora. CHESTNUT OAK. TAN-BARK OAK. California. 100 feet. A noble tree, of spreading habit and with immense trunks and branches. Staminate and pistillate flowers grouped together on the same catkin. Acorns numerous, in clusters, the cups densely clothed with fringe-like appendages. A grand ornamental tree.

Q. lobata. VALLEY OR WEEPING OAK. 100 feet. One of the great and striking trees of California, with wide-spreading and slender drooping branches. Grows most luxuriantly in open fertile valleys, giving the country a park-like appearance.

Q. palustris. PIN OAK. 40 to 50 feet. Beautiful deep green foliage which changes to rich scarlet and yellow color in autumn. A magnificent tree for single specimens on the lawn, and unexcelled in beauty for street and avenue planting. Makes one of the most shapely and graceful trees, the branches sweeping the ground.



QUERCUS LOBATA. VALLEY OR WEEPING OAK.

Q. pedunculata. (Q. robur). ENGLISH OAK. The Royal Oak of England. 120 feet. A well known tree of spreading, low growth, with rounded, lobed leaves, dark green above and pale bluish green beneath, fading to tones of yellow and russet-brown in autumn; when mature a majestic and grand shade tree.

Q. pedunculata fastigiata. PYRAMIDAL ENGLISH OAK. 80 feet. A handsome tree, with erect pyramidal branches and deep, dark green foliage, in general form it resembles the Lombardy Poplar.

Q. rubra. RED OAK. 80 to 120 feet. An American species of large size and rapid growth; leaves 7 to 9 lobed, the divisions bearing bristle-tipped teeth, rosy-pink at unfolding, dark dull green at maturity, turning orange and brown in autumn; acorns very large. A grand specimen or street tree and one of the most rapid-growing oaks.]

ROBINIA. The Locusts or False Acacias.

These beautiful rapid growing trees adapt themselves to almost any soil condition and reach effective growths within a short time. Some of the more slow growing types mentioned are very handsome subjects for the ornamentation of shrubbery. The varieties flower from the early spring until summer. Among the most striking of the slow growing types is the *Hispida*. The wood of the larger growing varieties is very hard and durable and is valuable for making posts and railroad ties. A plantation of locusts within fifteen years would prove to be a profitable investment.

Robinia hispida. ROSE-FLOWERING LOCUST. 10 to 12 feet. Of dwarf habit; beautiful rose-colored flowers, branches bristly; quite interesting.

R. neo mexicana. 6 to 8 feet. A new variety from Mexico, more of a shrub than a tree, branches covered with stout stipular prickles; flowers rose colored, calyx quite hairy. Very compact and of distinct habit.

R. pseudacacia. COMMON OR BLACK LOCUST. Eastern North America. 80 feet. A rapid-growing tree, with spreading branches; a valuable timber tree; lumber used for various mechanical purposes. Flowers white, appearing in spring.

R. pseudacacia bessoniiana. UMBRELLA LOCUST. 50 feet. The most ornamental of all the locust family; forms a solid, compact head, with dark green, luxuriant foliage. Branches practically thornless.

R. pseudacacia decaisneana. PINK FLOWERING LOCUST. 60 feet. A vigorous, straggling-growing variety, producing an abundance of fine rose-colored flowers in the springtime.

R. pseudacacia inermis. THORNLESS LOCUST. 40 feet. A medium sized growing variety with globe-shaped head, large dark green foliage and thornless.

R. pseudacacia semperflorens. 60 feet. A medium growing variety, producing an abundance of white flowers during the entire summer.

SALISBURIA. The Maidenhair Tree.

This strange species is said to be of great antiquity. It is the leading avenue tree in Washington, D. C. It does best in a deep moist soil and in a comparatively cool or warm damp climate. Is not suited to hot dry atmospheres. Its unique and striking appearance as a single specimen or avenue tree, should cause it to be generally planted where conditions are favorable for its development.

Salisburia adiantifolia. (*Ginkgo biloba*). 80 feet. A remarkable tree introduced in America early in the century; effective for lawn or avenue, combining in its habit the appearance of a conifer and deciduous tree. Foliage fern-like, yellowish-green, curiously lobed and marked with delicate hair-like lines resembling a Maiden Hair Fern. The fruits which mature in the fall have kernels of a sweetish slightly resinous flavor, highly esteemed in China and Japan for food. Does not thrive in hot, dry climates.

SALIX. The Willows.

Salix viminalis. OSIER WILLOW. Europe and Asia. 12 to 20 feet. A low growing tree and valuable for basket material, and for tying. When used for this purpose the main body of the tree should not be over six feet high and cut to spurs every winter.

S. vitellina aurea. GOLDEN WILLOW. A handsome tree, conspicuous at all seasons and particularly in the spring, when the branches are of a golden yellow. Becomes a very large and venerable tree.

SOPHORA. The Pagoda Tree.

This beautiful but rather rare tree with its dark green compound leaves and its wealth of creamy yellow pea-shaped flowers, distributed in large panicles, is worthy of a place in every farm, not only because of its beauty as a shade or avenue tree, but also because of the abundance of food it supplies for the bees during the entire summer and fall months.

Sophora japonica. JAPAN PAGODA TREE. 60 feet. A handsome, locust-like tree, but with better and darker green glossier foliage than the common locust; very de-



ROBINIA BESSONIANA. UMBRELLA LOCUST.

sirable for the interior valleys; flowers creamy white, disposed in loosely branched panicles. Flowers all summer. As a specimen or lawn tree, it has few superiors.

SORBUS. The Mountain Ash Trees.

These very ornamental trees all have handsome foliage, turning orange red in the fall. The fruits, which are scarlet are very showy and often remain on the branches all winter. They are not particular as to soil but do not thrive well in warm, dry climates.

Sorbus aucuparia. EUROPEAN MOUNTAIN ASH OR ROWAN TREE. 60 feet. A fine tree, with dense and regular head, covered from July to winter with great clusters of bright scarlet berries.

S. americana. AMERICAN MOUNTAIN ASH OR DOGBERRY. 30 feet. A tree of coarser growth and foliage than the European, and producing larger and lighter colored berries. Wood is valuable for handles of tools and similar small articles.

S. domestica. SERVICE TREE. S. Europe. 30 feet. A round headed tree. White flowers produced in rather loose, tomentose corymbs. Small apple-shaped yellowish fruit with orange or red cheek. When the fruit is mellowed by frost and becomes brown and soft, it resembles a Medlar in taste.

STERCULIA. The Parasol Tree.

A valuable tree for lawn and street planting. Well adapted to California conditions. The dull red and scarlet flowers, borne in great profusion and followed by carpel-like pods, adding greatly to its beauty.

Sterculia platanifolia. CHINESE OR JAPANESE PARASOL TREE. 40 feet. A splendid strong growing tree with round-topped head; leaves very large; Maple-like, bright green, turning yellow in autumn; flowers in terminal panicles, followed by curious pod-like fruits, expanding before maturity into leaf-like bodies, exposing the seeds. A fine street or lawn tree.

TAXODIUM. The Deciduous Cypress.

Taxodium distichum. DECIDUOUS OR BALD CYPRESS. Southern U. S. 150 feet. The latest tree to put forth green leaves in the spring; a distinct and handsome tree of slender habit, with soft, feathery foliage; the trunk is as straight as an arrow, and tapers regularly from base to tip; is not particular as to soil but does best on moist ground; a very desirable and ornamental tree.

TILIA. The Linden Trees.

A rather rapid growing medium sized tree adapted more especially to coast climates. It is not very particular as to soil. As a source of honey for bees it ranks among the best. Under favorable conditions the nectar drips from the flowers in a shower. The soft white wood is particularly adapted for veneering and it is also extensively used for making fruit, honey and other light packages.

Tilia americana. AMERICAN LINDEN OR BASSWOOD. 60 feet. A rapid growing, large sized tree; forming a broad round-topped crown; leaves broadly oval, dark green above and pale green beneath; flowers creamy white and very fragrant. Suitable for avenues, lawns or parks.

T. europaea EUROPEAN LINDEN OR LIME TREE. Native of Europe. 90 feet. A very fine, pyramidal tree, with symmetrical round-topped crown, leaves obliquely heart-shaped, bright green, fading in autumn to tones of yellow and brown; a handsome street or avenue tree.

T. tomentosa. (*T. sylvestris*). WHITE OR SILVER LINDEN. Eastern Europe. 40 feet. Showy, heart-shaped foliage; light green above and silvery beneath. Its handsome form and foliage render it worthy of being classed among the finest of our ornamental trees.

ULMUS. The Elms.

This genus stands in the first rank in the great army of American trees. They grow very rapidly and are not over particular as to soil. They were held in high esteem by the ancients, not only on account of their leaves, which were dried and used as fodder, but also on account of their being used as props for vines. Elm wood is very hard and is used especially for wheelwrights work. The trees are not only very long lived but they are of majestic, graceful habit and with their wide spreading branches,

straight, shapely trunks, they are great favorites for shade and avenue trees and for street planting. All of our trees are either budded or grafted, are true to their particular type; each tree of a variety as far as leaf form and habit is concerned being alike. The advantage of planting such trees in preference to seedlings must be apparent to anyone.

Ulmus americana. AMERICAN WHITE ELM. 120 feet. A magnificent large tree, with drooping, spreading branches; requires moist soil; one of the grandest of our native forest trees. Does not adapt itself as well to the great interior valleys as the European varieties.

U. campestris. ENGLISH OR FRENCH ELM. Europe, Africa, Japan. 100 feet. An erect tree of rapid compact growth, with dark green foliage; very robust, attaining an immense size; one of the best in this valley. The branches project from the trunk almost at right angles, giving the tree a noble appearance.

U. campestris aurea. GOLDEN ENGLISH ELM. 30 feet. A very handsome tree, with foliage of a uniform bronzy-gold color. One of the most distinct and desirable of elms.

U. campestris argenteo-variegata. VARIGATED ELM. 80 feet. Large leaves, sprinkled over with silver spots; variegation constant; tree a rapid, erect grower.

U. campestris clemmeri. 40 feet. Medium size of moderate growth and fine form. A very popular avenue tree in Belgium.

U. campestris monumentalis. MONUMENTAL ELM. 25 feet. A slow-growing, dwarf variety, forming a straight and dense column; very distinct and beautiful.

U. campestris glabra vegeta. HUNTINGDON ELM. 100 feet. Very erect; bark smooth; leaves large, of light green color; one of the finest of the European Elms. Is of erect habit and of more rapid growth than the English.

U. campestris suberosa. CORK BARK ELM. 80 feet. A valuable shade tree and very desirable for streets and avenues; young branches very corky; leaves rough on both sides.

U. montana crispa. (*U. urticifolia*). NETTLE-LEAVED ELM. 20 feet. A dwarf growing handsome variety, with long, serrated and undulating leaves; unique and beautiful.

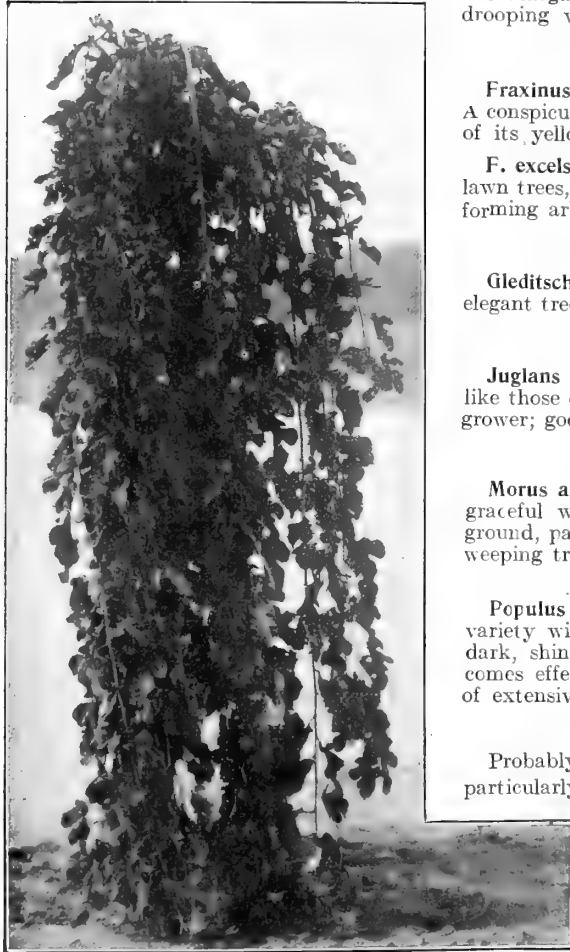
U. scabra atropurpurea. PURPLE-LEAVED ELM. 60 feet. A striking variety with erect branches, leaves of a rich purple color when young, changing to dark green when older.

WEeping DECIDUOUS TREES.

The weeping trees stand in a class by themselves. They are particularly effective when standing as specimens on a lawn or when grouped along the outer edges of larger growing trees. They lend, so to say, a pleasing finish to a group of both evergreen and deciduous forest trees. They are budded or grafted on straight stems of the same species at a height of six to eight feet from the ground. To bring out their best points and make them show off to the most advantage, it is very important to prune them regularly every winter. A systematic thinning out of the branches which crowd and interfere, and by careful attention to the shortening in of the extending limbs, and cutting to an upper limb or bud, will do more than anything else to give to the trees an arbor like appearance. Nothing is more unsightly than to allow a thick mass of weak spindling branches, requiring a wooden frame work underneath, to bring out the weeping effect. A properly pruned weeping tree is self supporting, and one with a perfect umbrella like form, with the pendulous branches almost touching the ground is sure to excite the admiration of the plant lover.

ACER. The Weeping Maple.

Acer saccharinum wieri laciniatum. WIER'S CUT-LEAVED MAPLE. A variety of Silver-leaved and one of the most beautiful trees with cut or dissected foliage. Of rapid growth, with slender drooping shoots, giving it a habit almost as graceful as the Cut-leaved Birch. The foliage is silvery underneath, the leaf stalks are long and tinted with red. It ranks among the most interesting and attractive of lawn trees, and will adapt itself even to small gardens, standing very severe cutting back without apparent injury.



MORUS ALBA TATARICA PENDULA. WEEPING RUSSIAN MULBERRY.

BETULA. The Weeping Birch.

Betula alba pendula laciniata. CUT-LEAVED WEEPING BIRCH. A charming tree with deeply lacinated foliage. Its tall, slender, yet vigorous growth, graceful, drooping branches, silvery white bark, and delicately-cut foliage present a combination of attractive characteristics rarely met with in one tree.

CERASUS. The Weeping Cherries.

Few drooping trees are more graceful, and they are specially adapted to beautiful grounds, while as single specimens on the lawn they are unique and handsome. When loaded with flowers they are most interesting and attractive, their slender branches being devoid of foliage and covered with a mass of bloom.

Cerasus japonica pendula. JAPAN WEEPING CHERRY. A very pretty small-headed pendent tree covered with a mass of single white flowers early in the spring before the leaves appear.

C. japonica rosea pendula. JAPAN WEEPING ROSE-FLOWERED CHERRY. One of the best pendulous lawn trees. The branches are slender and fall gracefully to the ground. The flowers are rose-colored and appear before the leaves.

CRATAEGUS. The Weeping Thorn.

Crataegus monogyna pendula rosea. WEEPING THORN. A pretty drooping variety, with slender branches and pink flowers.

FRAXINUS. The Weeping Ash Trees.

Fraxinus excelsior aurea pendula. GOLDEN BARKED WEEPING ASH. A conspicuous tree at all times, but particularly in winter, on account of its yellow bark and twisted branches.

F. excelsior pendula. EUROPEAN WEEPING ASH. One of the finest lawn trees, covering a great space and growing rapidly, and excellent for forming arbors and shady-streets.

GLEDITSCHIA. The Weeping Honey Locust.

Gleditschia triacanthos bujoti pendula. WEEPING HONEY LOCUST. An elegant tree with slender pendulous branches. A handsome lawn tree.

JUGLANS. The Weeping Walnut.

Juglans regia pendula. WEEPING ENGLISH WALNUT. Branches droop like those of a Willow; foliage similar to the ordinary Walnut; strong grower; good bearer of excellent thin-shelled nuts; highly ornamental.

MORUS. The Weeping Mulberry.

Morus alba tatarica pendula. WEEPING RUSSIAN MULBERRY. A very graceful weeping tree, with long, slender branches, drooping to the ground, parallel to the stem; one of the most graceful and vigorous of weeping trees.

POPULUS. The Weeping Poplar.

Populus grandidentata pendula. WEEPING TOOTHLEAVED POPLAR. A variety with slender, drooping, graceful branches, like cords; foliage dark, shiny green and deeply serrated. A very rapid grower and becomes effective earlier than any other class of weeping trees. Deserving of extensive culture.

SALIX. The Weeping Willows.

Probably the most rapid growing of the weeping trees and adapted particularly to moist locations. They are valuable and interesting subjects and wonderful effects may be obtained by grouping or massing them against tall growing dark foliaged evergreens. No matter where planted they are picturesque and the Babylonica, with its long graceful festoons never fails to attract admiration.

Salix babylonica. BABYLONIAN OR WEEPING WILLOW. The well-known Weeping Willow.

S. babylonica annularis. RING-LEAVED WILLOW. A variety with curiously curled or twisted leaves. An interesting tree, attracting attention wherever seen.

S. babylonica dolorosa. WISCONSIN WEEPING WILLOW. A handsome weeping tree, with large, glossy leaves; a stronger grower, with a more pendulous habit, than the Common Weeping Willow.

S. caprea pendula. KILMARNOCK WEEPING WILLOW. A form with drooping branches grafted on an upright straight stem. Forms an umbrella-like canopy, the branches eventually sweeping the ground.

SOPHORA. The Weeping Sophora.

Sophora japonica pendula. WEEPING SOPHORA. A beautiful weeping tree of very regular and graceful habit. Its small stature, trailing branches reaching to the ground combined with the deep dark green, glossy leaves, makes it add much to the appearance of a small garden or lawn.

TILIA. The Weeping Linden.

Tilia petiolaris. WEEPING LINDEN. One of the finest of Lindens, with slender, somewhat pendulous branches; leaves heart-shaped, rich green on the upper surface, silvery white beneath; when ruffled by the winds the snowy whiteness of the under surface of the leaves lends to the tree a very striking appearance.

ULMUS. The Weeping Elms.

Ulmus campestris suberosa pendula. WEEPING CORK-BARKED ELM. A highly ornamental, drooping variety with the young branches very corky.

U. fulva pendula. WEEPING SLIPPERY ELM. A variety of luxuriant growth, and elegant drooping habit and large rough leaves. Its branches shoot upwards at first, then bend in graceful curves toward the ground. It retains its foliage much longer than other elms.

Ulmus scabra pendula. CAMPERDOWN WEEPING ELM. Vigorous branches, having a uniform weeping habit; over-tapping very regularly and forming a roof-like head; the leaves are large, dark green and glossy, and cover the tree with a luxuriant mass of verdure.

DECIDUOUS SHRUBS.

The term shrubbery is usually applied to woody plants of comparatively small size. The line of distinction is difficult to draw, but a shrub has as a rule, a number of stems springing from the ground while a tree has a single stem. Why is it that the value of shrubs is not more appreciated in California and why they are not more extensively planted? The only inference is that they present a rather barren appearance in the winter and their exceptional beauty, their many variations in both color of leaves and flowers, is forgotten until they display their many attractions during the spring and summer months. Interspersed among larger trees, many varieties when in flower give life to a landscape effect which would otherwise be dull and displeasing to the eye. In grouping shrubs, the aim of the gardener should be to have the taller growing kinds serve as a back ground aiming to have a gradual slope to the lower growing kinds. The ultimate effect of the grouping should be to have a continuous mass of varying foliage. As a boundary or screen for dividing fields or hiding unsightly fences, or for a back ground for flower gardens, they are unsurpassed.

ARALIA. The Angelica Tree.

Form small trees and are very useful to give a tropical appearance to gardens.

Aralia spinosa. HERCULES CLUB. DEVIL'S WALKING STICK. A very fine native variety, with large doubly and triply pinnated leaves. The stout armed stems, large leaves and enormous clusters of flowers give this species a very distinct sub-tropical appearance.

BERBERIS. The Barberries.

Low growing shrubs, rich in their variety of leaf and habit. They are very attractive in the spring with their bright orange yellow flowers and in the fall with their red, dark blue or nearly black fruits.

Berberis thunbergii. THUNBERG'S BARBERRY. From Japan. A pretty species of dwarf habit, small foliage, changing to beautiful coppery red in autumn. Makes a fine hedge and will within a few years attain a height of four feet. It is also very desirable for giving a finishing effect to shrubbery and relieve it of any appearance of stiffness.

B. vulgaris. COMMON EUROPEAN BARBERRY. A native species, with handsome, distinct foliage, yellow flowers, succeeded by red berries.

Berberis vulgaris atropurpurea. PURPLE-LEAVED BARBERRY. A very pretty shrub, with purple foliage; fruit is acid, and is highly esteemed for preserving; very effective in groups or masses, or planted by itself.

CALYCANTHUS. The Sweet Shrubs.

Rather distinct shrubs, having an aromatic fragrance with large handsome foliage and sweet scented chocolate colored flowers. Should be pruned every winter to keep them in form.

Calycanthus floridus. SWEET SHRUB. Southern United States. A very desirable shrub with fragrant wood and rich foliage; flowers of a rare chocolate color, having a peculiar agreeable odor.

C. praecox. China, Japan. A very vigorous growing variety having larger leaves than the preceding.

CERASUS.**The Flowering Cherries.**

This is a very ornamental family of shrubs or small trees. They are especially well adapted for beautifying small grounds. The beautiful tinting of the flowers combined with their very effective appearance pushing out long before the leaves appear, makes them particularly desirable as early spring flowering plants.

Cerasus sieboldii

alba plena. SIEBOLD'S DOUBLE-FLOWERED CHERRY. 10 feet. A

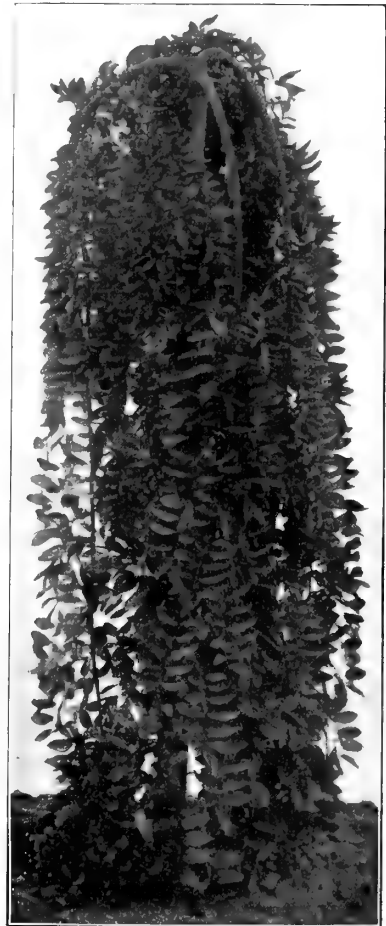
Japanese Cherry, with large, semi-double, white flowers tinged with red, forming large clusters and so numerous as to almost conceal the branches.

C. sieboldii rubra plena. SIEBOLD'S DOUBLE-RED FLOWERED CHERRY. 10 feet. A variety of the above with large double red flowers.

C. sinensis flore plena. CHINESE DOUBLE-FLOWERED CHERRY. 8 feet. A fine sort, with large, double white flowers.

CHAMAECERASUS. The Upright Honeysuckle.

Chamaecerasus alberti. UPRIGHT HONEYSUCKLE. Himalaya Mountains. 3 feet. A small upright growing shrub with narrow leaves and rigid spiny branches. Flowers rosy pink, fragrant, on slender erect stems. Very quaint and very desirable.



SOPHORA JAPONICA PENDULA. WEEPING SOPHORA. SEE PAGE 62.

COLUTEA. The Bladder Senna.

Colutea arborescens. **BLADDER SENNA.** South of Europe. 12 feet. A large shrub with small compound leaves, and yellow pea-blossomed flowers in June, followed by reddish pods or bladders.



CERASUS SIEBOLDII ALBA PLENA. DOUBLE WHITE FLOWERING CHERRY. SEE PAGE 63.

CORCHORUS. The Japanese Rose.

A very attractive shrub with slender green branches and showy deep golden yellow flowers appearing in April and May. Will do well in any ordinary garden soil.

Corchorus japonica. (*Kerria japonica*). **JAPANESE ROSE.** 8 feet. An old and well known favorite, of spreading habit and with double rose like flowers, an inch across of the deepest yellow, appearing in April.

C. japonica argenteo variegata. **SILVER VARIEGATED-LEAVED CORCHORUS.** 4 feet. A very pretty dwarf shrub from Japan, with small green foliage edged with white, and flowers like the preceding.

CORYLOPSIS. The Flowering Hazel.

Corylopsis spicata. **LARGE-LEAVED FLOWERING HAZEL.** Native of Japan. 4 feet. An attractive shrub with handsome foliage and showy bright yellow, fragrant flowers, in many flowered racemes.

CORNUS. The Dogwoods.

A very desirable class of shrubs with handsome foliage, often assuming a brilliant fall coloring and with attractive flowers and fruits. Thrive in almost any situation, doing equally as well under the shade of trees as they do in sunny locations. They require severe pruning.

Cornus sanguinea. **EUROPEAN RED OSIER DOGWOOD.** A native of Europe. 10 to 12 feet. A spreading shrub with deep red, purplish branches and greenish white flowers, in dense flat-topped clusters, followed by blackberries.

C. elegantissima variegata. Beautiful variegated foliage; covered with white flowers in June. Bark bright red in winter.

CYDONIA. The Flowering Quinces.

The Japanese Quince is a beautiful dwarf species, remarkable for the brilliancy of its blossoms, which vary from the richest scarlet to the most delicate blush color. They are well adapted for single plants, on the lawn, for the edges or borders of groups of trees and for planting ornamental hedges. They are the first shrubs to blossom in the spring and the flowers appear in great profusion covering every branch, branchlet and twig before the leaves appear. The foliage is of a heavy texture, bright green and retains its color the entire summer, rendering the plants very ornamental. The fruit has a delicious fragrance but is entirely worthless for culinary purposes. Should be summer pruned to maintain compactness and to secure a profusion of blossoms.

Cydonia japonica. **SCARLET JAPAN QUINCE.** Has bright scarlet crimson flowers in great profusion in the early spring, before the leaves appear.

C. japonica alba. **BLUSH JAPAN QUINCE.** Similar to the above except that the flowers are a delicate white or blush.

C. japonica candidissima. Flowers large, white; very striking shrub.

C. japonica grandiflora rosea. Flowers pink, very showy.

C. japonica umbilicata. Flowers brilliant red, succeeded by large showy fruit. One of the finest.

DEUTZIA. The Deutzias.

A genus of slender branched, graceful shrubs introduced from Japan, with very effective foliage, blooming in great profusion in the spring. The flowers are white and are produced in long racemes; one of the most attractive and deservedly popular of flowering shrubs. Requires severe pruning immediately after flowering.

Deutzia crenata candidissima. **DOUBLE WHITE DEUTZIA.** 6 to 8 feet. A very upright growing shrub, with dull green leaves and very free flowering. Flowers, double, pure white, in erect panicles 2 to 4 inches long.

D. crenata flore roseo plena. (*D. fortunei*). **DOUBLE PINK DEUTZIA.** Similar to the preceding but with one, or more of the outer petals rosy-purple. Very showy.

D. gracilis rosea. **SLENDER PINK DEUTZIA.** 4 feet. A dwarf growing shrub, with bright green leaves, slightly rough on the upper surface. Flowers light rose, in profuse clusters.

D. scabra. **ROUGH-LEAVED DEUTZIA.** 6 to 8 feet. Flowers bell-shaped in upright racemes, pure white, profuse and showy, foliage oval, very rough underneath.

DIERVILLAS. The Weigelas.

This genus of very ornamental hardy deciduous shrubs was introduced from Japan. There are few shrubs more deservedly popular or any that have been more widely disseminated. They flower shortly after the lilacs, producing superb large, trumpet shaped flowers varying from pure white to deep red. Their foliage contrasts finely with the green of other shrubs, and for borders and interspersed among groups of trees they are very effective. To make them flower freely, they should be well pruned after flowering in the summer, and thus give the short shoots formed a chance to ripen up.

Diervilla florida. **ROSE-COLORED WEIGELA.** A handsome free-flowering shrub usually about six feet tall with numerous spreading branches. Leaves smooth, dark green. Flowers rose-colored, large and showy. The following are the best varieties of this species.

D. florida candida. **WHITE-FLOWERED WEIGELA.** A very free flowering variety, pure white and continues to bloom through the summer. One of the very best.



DEUTZIA CRENATA CANDIDISSIMA. DOUBLE WHITE DEUTZIA. SEE PAGE 64.

Diervilla hybrida lavallei. A straggling grower producing dark reddish purple flowers; the darkest variety.

D. kosteriana steltzneri. A dwarf variety. A very profuse bloomer; flowers dark red.

D. kosteriana nana variegata. VARIEGATED-LEAVED DWARF WEIGELA. A neat, dwarf shrub, valuable for the clearly-defined variegation of green and silvery-white in its leaves; flowers nearly white; it stands the sun well, and is one of the best dwarf variegated-leaved shrubs.

D. sieboldi alba marginata. Of erect habit. When the leaves are young the variegation is yellow, but as they mature it becomes silvery white. Flowers rose-colored. A beautiful variegated shrub.

ERYTHRINA. The Coral Trees.

Erythrina crista-galli. CORAL TREE. 10 feet. This strikingly beautiful summer flowering shrub is deserving of the widest dissemination, for it seems to find conditions in California causing it to grow to perfection. The flowers are of a bright brilliant crimson color, like immense peas, but four times larger, and are disposed in large terminal racemes. The young growth freezes every winter and should be cut off from the woody fibrous branches. The brilliant coloring of the flowers combined with the deep green of the foliage, lends to this plant an individuality which is all its own. Flowers profusely from early in the summer until late in the fall.

EUONYMUS. The Strawberry or Spindle Tree.

These shrubs are very highly ornamental in the autumn, the intense coloring of their foliage at this time, and their showy fruit make them very attractive.

Euonymus europaeus. EUROPEAN EUONYMUS. A small tree or shrub growing to 20 feet; leaves turn scarlet in the fall; produce medium-sized scarlet berries having every appearance of strawberries.

FORSYTHIA. The Golden Bells.

Introduced from the north of China; one of the earliest of the spring flowering shrubs, being completely covered in the early spring before the leaves appear, with tufts of rather large, pendulous bright yellow flowers, which grow two or three together from all parts of the rod-like branches.

Forsythia suspensa. DROOPING GOLDEN BELL. 6 feet. An excellent shrub for the margin of groups; foliage deep green, flowers bright yellow; branches slender, drooping.

F. suspensa fortunei. FORTUNE'S GOLDEN BELL. 8 to 10 feet. A grand shrub, similar to the preceding, but of more vigorous upright growth. Branches arching with dark lustrous green leaves. Flowers golden yellow, often with twisted petals.

F. viridissima. DARK GREEN FORSYTHIA. 6 feet. A large shrub, with erect green-barked branches. Leaves nar-

row, very dark green. Flowers golden yellow with reflexed petals. A very striking shrub.

HALESIA. The Silver Bell.

Halesia diptera. SNOWDROP OR SILVER BELL TREE. 10 feet. A large shrub, forming a low wide head. Leaves bright green, turning pale yellow in autumn. Flowers pure white, an inch long; fruit distinguished by its papery wings one to two inches long.

HIBISCUS. The Althea or Rose of Sharon.

These beautiful shrubs should receive much more attention than is being accorded to them. They are of the easiest cultivation and with their large, delicately hued bell-shaped flowers appearing very profusely during the summer months, are doubly interesting when comparatively few other trees or shrubs are in blossom.

Hibiscus syriacus. (*Althaea frutex*). ROSE OF SHARON. 6 feet. There are both double and single flowered forms, with a wide range of colors. The following are among the best varieties.

Boule de feu. Double, pink center, shading to red.

Bicolor. Single white, slightly tinted red.

Elegantissima. Double white.

Grandiflorus superba. Double, delicate blush, carmine center.

Jeanne d'Arc. Double, pure white.

Meehani. Variegated leaves, flowers single, bluish pink, red center.

Rubra plena. Clear color, double red; one of the best.

Totus albus. Single, pure white.

HYDRANGEA. The Hydrangeas.

These very ornamental large leaved plants with their enormous corymbs of beautifully colored flowers are worthy of the most extensive cultivation. Conditions favoring their most rapid development are found in cool coast climates. In the interior valleys they require partial shade, and must be well supplied with moisture to bring out their many fine points. Their large delicately ribbed leaves and their wealth of bloom places them very prominently in the front as among the best of our summer flowering plants.

Hydrangea hortensis. JAPANESE OR GARDEN HYDRANGEA. 4 feet. A native of Japan, has large dark green leaves, and globular heads of rose-colored flowers. One of the hardiest and very free flowering.

H. hortensis Thomas Hogg. 4 feet. One of the hardiest, adapted to pot culture and out door cultivation. Flowers pure white, a very profuse bloomer.

Hydrangea otaksa monstrosa. GIANT FLOWERED HYDRANGEA. 4 feet. The immense blooms of this variety, heads 12 to 15 inches in diameter being nothing uncommon with the additional good quality of color, which is a pleasing shade of pink, make it one of the most desirable and effective varieties not only on account of its size but also for its free flowering qualities.

H. paniculata grandiflora. LARGE-FLOWERED HYDRANGEA. 8 feet. A magnificent shrub, one of the finest of the summer flowering plants, commencing to bloom in early August and continuing until frost. The immense heads of bloom, which are cream color in bud, pure white when fully open, changing to pink and bronze with age, make a striking spectacle wherever planted.

LAGERSTROEMIA. The Crape Myrtles.

This very strong growing shrub, adapting itself to almost any soil condition, should have a place in every garden. The leaves are bright green, retaining their fresh color all summer; the flowers are produced in very large panicles at the ends of the branches during the entire summer. They are very pretty, having curiously crimped petals. Should be winter pruned to retain compactness of form.

Lagerstroemia indica alba. WHITE CRAPE MYRTLE. Asia. 6 to 8 feet. Of somewhat slow growth, leaves ovate, dark lustrous green. Flowers very much crimped and ruffled. Seems to be exceptionally well adapted to our interior climates.

L. indica purpurea. PURPLE CRAPE MYRTLE. 12 feet. Flowers deep purple.

L. indica rosea. PINK CRAPE MYRTLE. 12 feet. A very free bloomer; flowers pink; a most desirable shrub for grouping; very rapid grower.

LIGUSTRUM. The Deciduous Privets.

Too much cannot be said in favor of these shrubs. They grow rapidly, assume very desirable forms with little or no pruning, and for hedge purposes where a bank of bright green foliage is desired, they have few equals. Although classed with deciduous plants, they are not entirely so in California.

Ligustrum ciliatum. BRIGHT-FRUITED PRIVET. Japan. 4 to 6 feet. Dwarf, dense shrub, with short, rigid branches; leaves dense, glossy, dark green, leathery, ovate oblong, obtuse. Flowers white in erect compact clusters. Berries black shining.

L. ciliatum variegatum. Of the same habit as the preceding except that the leaves have a pronounced yellowish variegation, pink when young.

L. ibota. CHINESE PRIVET. China and Japan. 4 to 6 feet. New. A low dense growing shrub, with almost horizontally spreading branches; leaves long and shining; flowers white, very fragrant, in numerous nodding

clusters. A charming shrub which will be prized as a specimen plant and for mass planting.

L. ovalifolium. CALIFORNIA PRIVET. Japan. 12 to 15 feet. A pyramidal shrub, with bright green, medium sized leaves; producing white flowers in June; a valuable hedge plant which has been more extensively planted in the eastern and middle west states than any other variety.

L. ovalifolium variegatum. CALIFORNIA VARIEGATED PRIVET. 10 feet. Variegation a fine yellow in young leaves, passing into white as the leaves get older. A vigorous compact grower, fully equal in this respect to the preceding.

LIPPIA. The Lemon Verbena.

Lippia citriodora. LEMON VERBENA. 6 feet. This old fashioned favorite is a low growing shrub, with long, narrow pointed leaves which emit a delightful fragrance; covered in summer with minute flowers in delicate pyramidal panicles. Very hardy in California.

PAEONIA MOUTAN. The Tree Peonies.

Paeonia Moutan. TREE PEONY. These immense and beautiful flowering shrubs were introduced from Japan. They bloom in April and in Japan they are very much prized and are regarded as among the best of their many flowering plants. Positions for planting should be selected where the influence of the sun's rays are not felt until late in the morning. The plant is a greedy feeder and should have an abundance of manure annually. The flowers are enormous in size, numerous and gorgeous in color.

PHILADELPHUS. The Mock Oranges.

A very vigorous class of shrubs, with large, handsome foliage and with white showy flowers in terminal racemes, or solitary on short branchlets, appearing in May and June. Very fragrant with an odor of the orange blossom, hence the name. They are well adapted to shrubberies thriving in any well drained soil even under trees. Most of the varieties, except those of dwarf habit, form large sized shrubs 12 to 15 feet high. Pruning should be done after flowering, as the blooms appear on wood formed the previous year.

Philadelphus coronarius. GARLAND MOCK ORANGE. 10 to 15 feet. Flowers pure white, delightful orange blossom fragrance; one of the first to bloom.

P. coronarius flore pleno. DOUBLE-FLOWERED MOCK ORANGE. 12 feet. A variety with double, very fragrant flowers.

P. coronarius aureus. GOLDEN MOCK ORANGE. 2 to 3 feet. A dwarf, compact shrub, with bright yellow foliage; very effective as a low foliage plant for edging.

P. grandiflorus. LARGE-FLOWERED MOCK ORANGE 10 to 12 feet. A tall bush of slender, twiggy habit, with large flowers slightly fragrant. Valuable for succession of bloom.



ERYTHRINA CRISTA-GALLI. CORAL TREE. SEE PAGE 65.



HIBISCUS SYRIACUS. ROSE OF SHARON.
SEE PAGE 65.

Philadelphus inodorus. SCENTLESS MOCK ORANGE. 10 feet. A shrub with spreading branches, coated with brown bark. Flowers very large, white, scentless; free flowering; a valuable sort.

P. lemoinei. HYBRID MOCK ORANGE. 4 to 6 feet. Flowers yellowish white, semi-double, with delightful fragrance, completely covering the plant.

POINCIANA. The Bird of Paradise.

Poinciana gilliesii. BIRD OF PARADISE. 6 feet. This hardy shrub adapts itself to even the poorest soils and attains a height of eight to ten feet. Its light yellow large pea-shaped flowers, two inches long, with their brilliant protruding red stamens, produced in terminal racemes and appearing all summer, render it a very showy and worthy plant.

PUNICA. The Flowering Pomegranates.

A native of Southern Asia where it is grown for ornament and for its edible fruit. As an ornamental shrub or small tree, it is much prized in the South of Europe and in many eastern countries. Attains a height of 12 to 15 feet except the dwarf types which do not grow taller than 4 feet. These fine shrubs do particularly well in California; flowers measure two inches across, are very double and appear all through the season. Pruning should be done annually to hold them in bounds and to promote leaf growth and a bountiful supply of flowers.

Punica granatum alba. WHITE FLOWERING POMEGRANATE. A very rapid-growing shrub, with double, creamy white flowers.

P. granatum legrellei. MME. LEGRELLE. Very fine, large scarlet flowers edged with yellow.

P. granatum rubra. SCARLET POMEGRANATE. A very rapid-growing shrub with deep, double scarlet flowers.

P. granatum nana alba. DWARF WHITE POMEGRANATE. A dwarfish growing shrub, with small shining dark green leaves and covered with large, double yellowish white flowers in the summer months, followed by medium sized fruits.

P. granatum nana rubra. DWARF SCARLET POMEGRANATE. A very handsome small shrub, with beautiful double scarlet flowers, blooms when very young. Fruits appearing in the fall are brilliant red, very showy but not fit to be eaten.

PYRUS. The Flowering Crab Apples.

Low growing trees, admirably adapted for the lawn or for lending color to low growing shrubbery. These flowering apples have never received the attention they deserve. They should be widely planted. Attain a height of 8-10 feet.

Pyrus malus flore roseo pleno. CHINESE DOUBLE ROSE FLOWERED CRAB. Has beautiful double rose-colored flowers two inches across, in April.

P. malus floribunda. Single flower, carmine in bud, white when open; fruit very ornamental in autumn.

P. malus kaido. One of the most showy of the flowering apples; flowers single white and pink; holds its showy fruits all winter.

P. malus medwietzkyanas. A variety from Siberia of recent introduction. Continues in bloom for two months; produces a large number of red flowers.

P. malus spectabilis flore albo pleno. CHINESE DOUBLE WHITE-FLOWERED CRAB. Double white fragrant flowers in clusters.

RHAMNUS. The Buckthorn.

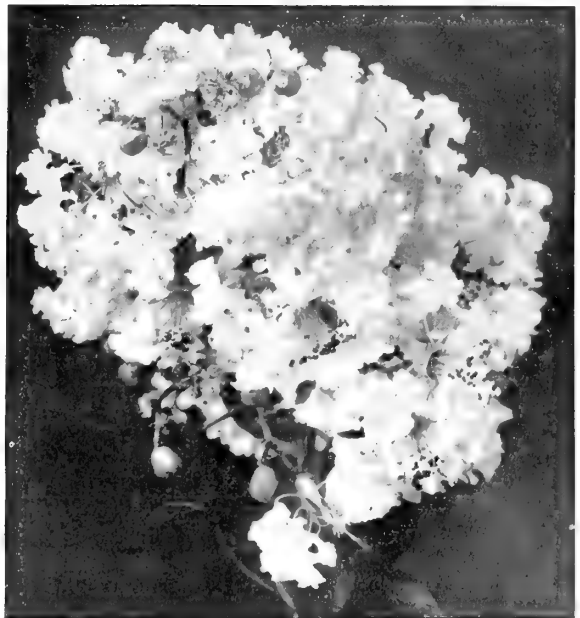
Rhamnus catharticus. PURGING BUCKTHORN. Europe. 12 feet. A fine very robust shrub, with large dull green, very rough foliage; flowers appear in April, succeeded by numerous small fruits.

RHODOTYPOS. The White Kerria.

Rhodotypos kerrioides. A much branched shrub from 4 to 6 feet high, introduced from Japan, with very pretty, deeply veined leaves and pure white flowers, borne at intervals all summer, having a rose like appearance, and followed in the autumn by small shiny black fruits. It is quite rare and is worthy of wider cultivation.

RHUS. The Sumach Trees.

Few shrubs are more picturesque or so little used. Their beauty lies in the gorgeousness of their foliage and in the Smoke Tree in the downy masses surrounding the seeds in mid-summer, apparently enveloping the tree in puffs of smoke.



LAGERSTROEMIA INDICA ALBA WHITE CRAPE MYRTLE
SEE PAGE 66.

Rhus cotinus. SMOKE TREE. Europe. 15 to 20 feet. A low growing shrubby tree, covered in midsummer with large clusters of feathery flowers, giving the appearance of a cloud of smoke or mist. An unusual shrub, always attractive. The flowers have fine keeping qualities and are very pretty when used for house decoration.

R. glabra. SMOOTH SUMACH. U. S. 10 to 12 feet. A shrub or small tree with an open crown, with compound leaves, dark green above, whitened beneath turning brilliant scarlet in autumn. Very effective in autumn with its crimson seeds and foliage.



R. glabra laciniata. CUT-LEAVED SUMACH. 12 feet. A very striking plant; leaves very large, deeply cut, and drooping gracefully from the branches, and turning to a rich red in autumn.

SAMBUCUS. The Elders.

These are showy, large shrubs, quite ornamental in flowers, fruit and foliage; they blossom in June; very desirable for grouping. To keep the plants in good shape the pruning shear should be used regularly every winter.



Sambucus nigra. EUROPEAN ELDER. 10 to 15 feet. A large shrub with dark green leaflets and white flowers produced in flat topped clusters in early summer. Fruit black, quite showy.

S. nigra argentea. SILVER-VARIEGATED ELDER. A valuable variety, with silvery-white margined foliage. One of the best variegated shrubs.

S. nigra aurea. GOLDEN ELDER. A handsome variety, with golden-yellow foliage; a valuable bush for enlivening shrubberies.

S. nigra laciniata. CUT-LEAVED ELDER. An upright growing variety with deep cut foliage, lending

PHILADELPHUS. MOCK ORANGE. SEE PAGE 66.

to the plant an airy fern-like aspect. One of the most striking varieties of the group.

S. nigra pyramidalis. PYRAMIDAL ELDER. A new variety quite distinct from any of the old forms in habit of growth, being erect, and stately with very abundant massive foliage.

SPIRAEA. The Spireas.

An indispensable class of small to medium-sized shrubs, embracing a wide range of foliage, habit of growth, color of flowers and season of blooming; all of earliest culture in all soils. Grows 3 to 6 feet high.

Spiraea billardi alba. BILLARD'S SPIREA. White flowers in dense spikes; blooms nearly all summer.

S. bumalda. EVERBLOOMING SPIREA. Habit, dwarf and compact; flowers in clusters, rosy pink, appearing in great profusion during mid-summer and autumn; very free.

S. bumalda Anthony Waterer. CRIMSON SPIREA. (New). A valuable addition to our list of shrubs; a strong grower, free bloomer, not only in summer, but also during the fall. An ideal pot plant; in every way a grand Spirea.

S. callosa alba. FORTUNE'S DWARF WHITE SPIREA. A white flowering variety of symmetrical form and dwarf bushy habit. Flowers all summer.

Spiraea paniculata rosea. A vigorous grower with cyme of rose-colored flowers. Blooms in June.

S. reevesiana. BRIDAL WREATH. This is the popular well known variety, with graceful arching branches, and round clusters of white flowers that cover the whole plant and cause it to be very much admired when in full bloom. Flowers in May.

S. thunbergii. THUNBERG'S SPIREA. Of graceful habit; branches slender and somewhat drooping; foliage yellowish-green; flowers small, white, appearing very early in the spring.

S. ulmifolia. ELM-LEAVED SPIREA. Covered with large white clusters of flowers in May. Has elm-like foliage. A rather odd but interesting shrub.

S. van houttei. VAN HOUTTE'S BRIDAL WREATH. This is the most beautiful of the early flowering Spireas. Similar to the Bridal Wreath but of far more graceful habit, and the delicately poised white flowers with which the branches are covered in May gives it a most beautiful appearance. We can recommend it most highly.

STAPHYLEA. The Bladder Nuts.

Very vigorous growing shrubs with showy flowers and peculiar inflated seeds. They thrive best in moist soil and partial shade.

Staphylea colchica. COLCHICAN BLADDER NUT. Introduced from the Caucasus Mountains, Russia, and growing from 6 to 10 feet high. A fine early flowering shrub, with showy pinnate foliage and clusters of handsome pure white, fragrant flowers appearing at the same time as the Lilacs.

S. pinnata. EUROPEAN BLADDER NUT. 12 to 15 feet. Leaves bright green; flowers pure white, produced in long clusters in late spring. Pods 2 to 3 lobed and widely inflated.

SYMPHORICARPOS. The Snowberries.

Quaint American shrubs well adapted for covering the ground under trees, and for massing at the edges of beds or borders of larger shrubs. The fruits which appear in the fall are snowy white and very persistent. Picturesque and pleasing additions to the winter landscape.

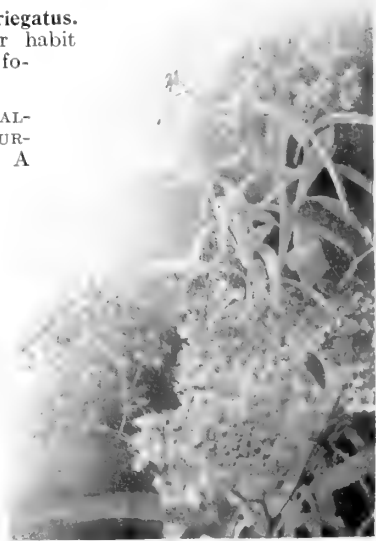
Symphoricarpos racemosus. SNOWBERRY. 2 to 4 feet. A shrub of very pretty habit, with small pink flowers and large white berries in clusters, which hang on the plant throughout the greater part of the winter.

S. racemosus variegatus. A shrub of similar habit but with variegated foliage.

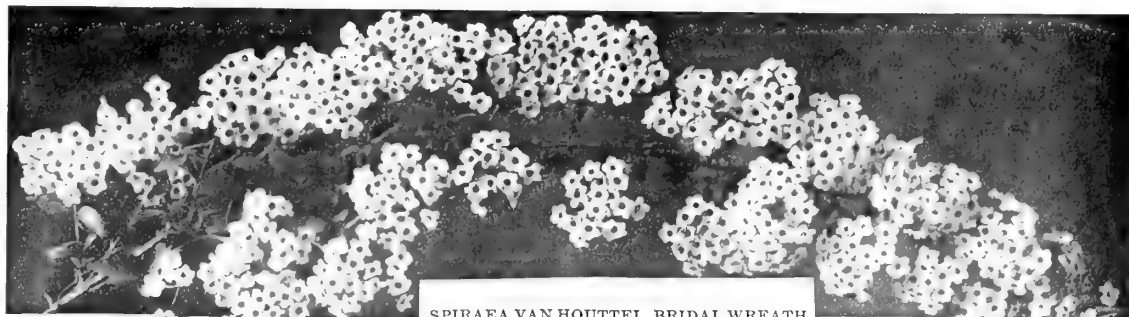
S. vulgaris. CORAL-BERRY OR INDIAN CURRANT. 2 to 4 feet. A shrub of very pretty habit; leaves bright green, and tinged with reddish purple when young; flowers greenish red, fruit purple, hangs all winter.

SYRINGA. The Lilacs.

This class of beautiful flowering shrubs should be in every garden. They are adapted



SPIRAEA BUMALDA.
EVERBLOOMING SPIREA.



SPIRAEA VAN HOUTTEI. BRIDAL WREATH

SEE PAGE 68.

to all soils; are extremely hardy, and are among the best of our beautiful spring flowering shrubs. There are a large number of hybrids of *Syringa Vulgaris* or Common Lilac and our collection comprises a selection of the very best. Their sweet fragrance, great range of colors, from dark purple to lilac, pink and white, gives them a great prestige in the group of spring flowering plants. The double flowering varieties keep their blooms longer but they do not flower as freely and their panicles are not as graceful as the single ones. Immediately after blooming they should be pruned as the flowers are always on the old wood.

Syringa josikea. HUNGARIAN LILAC. 10 to 12 feet. A fine distinct species, of tree like growth, with dark, shining leaves, and violet purple flowers in narrow panicles, appearing very late.

S. japonica. JAPANESE LILAC. 15 feet. A new species from Japan growing to a good sized tree. Foliage dark green, glossy, leathery; flowers creamy white, odorless, in great panicles. A month later than other lilacs.

S. persica. PERSIAN LILAC. Native of Persia. From 4 to 6 feet high with small foliage and bright purple flowers.

S. persica alba. WHITE PERSIAN LILAC. Delicate white fragrant flowers, shaded with purple. A rare but very fine variety.

S. persica laciniata. CUT-LEAVED PERSIAN LILAC. 6 to 8 feet. A very erect growing kind with slender branches, foliage deep cut and very much pinnatifid; flowers light purple and borne in smaller panicles and pushing out two weeks later than any of the other varieties.

S. rothomagensis. ROUEN LILAC. 8 to 10 feet. A distinct hybrid variety with slender, arching branches, bright green foliage and lilac purple flowers, in showy broad panicles in mid-spring. One of the finest lilacs.

S. villosa. HIMALAYAN LILAC. A new species from the Himalayas. 6 to 8 feet. Flowers fragrant, light purple in bud, white when open; valuable on account of flowering late. Foliage resembles that of the White Fringe.

S. vulgaris. COMMON LILAC. 6 to 8 feet. Upright growing shrubs, with heart shaped leaves and deliciously fragrant flowers, varying from white to shades of lilac, blue and purple. The varieties listed below are among the best of this family. For ready reference the single and double varieties are described under separate heads.

SINGLE LILACS.

Alba. Creamy white.

Alba grandiflora. Pure white trusses, large flowers.

Ambroise Verschaffelt. Pale pink.

Charles X. Reddish purple.

Geant des Batailles. Bluish lilac.

Ludwig Spath. Fine, dark purplish red.

Marie Legraye. Large panicles, pure white, one of the best.

Virginalis. Very delicate, pure white.

DOUBLE LILACS.

Charles Joly. Large truss, reddish purple.

Lemoinei flore pleno. Large panicles, semi-double, reddish purple.

Mme. Casimir Perier. Large compact panicles, white.

Michel Buchner. Plant dwarf, truss very large, pale lilac.

President Grevy. One of the finest, beautiful blue, panicle magnificent, 10 inches long and 5 inches across.

TAMARIX. The Tamarisks.

Elegant, fine foliage and handsome flowering shrub, thriving in all soils; one of the best plants for growing near the seashore, as it will bear the greatest wind exposure with impunity. Does well also in the interior thriving under the most trying conditions where other plants would fail entirely. Flowers pink, long, tapering panicles.

Tamarix gallica. FRENCH TAMARISK. 12 feet, Europe and Asia. Foliage exceedingly fine and feathery in appearance; branches long and slender; flowers pink, small, but very numerous, giving the plant a very showy appearance.

T. germanica. GERMAN TAMARISK. 10 feet. Of compact growth with upright, wand-like branches, leaves bluish green, minute; flowers light pink.

T. hispida. (*T. kashgarica*). 15 feet. Beautiful and elegant new sort, very vigorous, upright grower; leaves of a glaucous bluish green color; flowers bright carmine red; appearing in the summer and autumn. A great acquisition.

VIBURNUM. The Snowballs.

There are but few deciduous shrubs which better repay a limited amount of care than these most prolific flowering plants. They are very attractive specimen plants and for grouping have but few equals. No garden can afford to be without them.

Viburnum opulus sterile. SNOWBALL OR GUELDER ROSE. 8 feet. A great favorite, produces an abundance of pure white globular flowers in May and June.

V. tomentosum plicatum. JAPANESE SNOWBALL. 6 feet. One of the choicest shrubs with healthy dark green foliage; flowers pure, delicate white in large globular heads, appearing in May. Far superior to the common variety, having a better habit, larger leaves, and much more free in blooming. One of the most popular summer flowering shrubs. In dry, warm climates must be shaded from the sun the first season to prevent burning.

VITEA. The Chaste Tree.

Vitex agnus castus. CHASTE TREE. HEMP TREE. MONK'S PEPPER TREE. 15 feet. A small tree with palmate leaves, scented like lavender. Particularly valuable for its late appearing pale lilac flowers, in pretty spikes. A very desirable tree.

XANTHOCERAS. The Chinese Flowering Chestnut.

Xanthoceras, sorbifolia. CHINESE FLOWERING CHESTNUT. China, 15 feet. A tree of small stature with pinnate leaves like the Mountain Ash; flowers white, with red

streaks about the base of the petals, appearing at the same time that the leaves push out in April. Very floriferous and a desirable ornamental tree.

EVERGREEN TREES.

Under this head are associated the trees which do not shed all their foliage at one time, thereby remaining green, although the old leaves do shed from time to time as they become overshadowed or crowded out by the younger foliage. It is the evergreen tree which has done so much to enliven the landscape of California during the winter months, and it is therefore no wonder that the eastern tourist coming from his bleak and snow bound home, should be charmed and fascinated with our invigorating and salubrious climate and our great wealth, of evergreen trees and shrubs.

Instructions relative to planting and pruning have already been given under the heading "Ornamental Department."

ABIES. The Firs.

This group typifies to a remarkable degree everything one may expect in an evergreen tree. Their variations in color from glaucous blue to the deepest dark green, adds much to their value as single specimens or for grouping to secure a combination of colors. Add to their other attractions their pyramidal form which they assume naturally without cutting, too much can not be said in their favor. It is this family above all others which is so extensively used as Xmas Trees. They are readily distinguished from the Spruces by their erect cones and needle shaped leaves, scattered all around the shoots. We recommend in the interior valleys the planting of nothing smaller than 1½ to 2 ft. plants, as they are subject to sun-scald in their younger stages of growth.

Abies douglasi. (*Pseudotsuga mucronata*). DOUGLAS SPRUCE, OREGON PINE. 120 ft. A beautiful, tree, with spreading, horizontal branches; foliage dark or bluish green. The most important source of lumber in Oregon and Washington. A fine specimen tree and its rich coloring makes it valuable for grouping.

A. firma. JAPANESE SILVER FIR. 100 feet. Japan. An erect tree of great beauty attaining a height of 100 feet; leaves deep glossy green above, and paler beneath.

A. nobilis. NOBLE FIR. 100 feet. A majestic tree and one of the best firs in cultivation; leaves bluish green, sometimes glaucous. Cones 4 to 6 inches long with pale green, reflexed bracts.

A. nordmanniana. NORDMANN'S SILVER FIR. Very symmetrical; foliage massive, dark green, shining above and slightly glaucous below; an exceedingly handsome tree.

Abies pectinata. EUROPEAN OR COMB-LIKE SILVER FIR. Central Europe. 80 feet. A very noble tree with spreading branches and broad silvery foliage.

A. pinsapo. SPANISH SILVER FIR. 60 feet. One of the most magnificent of the species, very regular and symmetrical in habit; leaves bright green above, faint silvery beneath. Well suited to warm climates.

ACACIA.

This great family of plants comprises about 400 species and the genus is one of the largest known. We have confined ourselves to varieties of well known merit and the purposes for which these are best suited are enumerated below.

The acacia finds conditions favorable to its very best development in California, for the climatic conditions are very similar to those of Australia and New South Wales,

from which all the best varieties originate. Some of them are very rapid growers and make fine strong trees and may be used either for single specimens, street or avenue planting; others have a tendency to grow in the form of immense spreading bushes and may be used to advantage for grouping,

for they become effective within a very few years after planting. With good drainage and a bountiful supply of water in the summer months, it is astonishing how rapidly they grow. Nearly all of them are very floriferous, some of them commencing to bloom before the winter season is over with. As a class they are worthy of the widest dissemination in California.

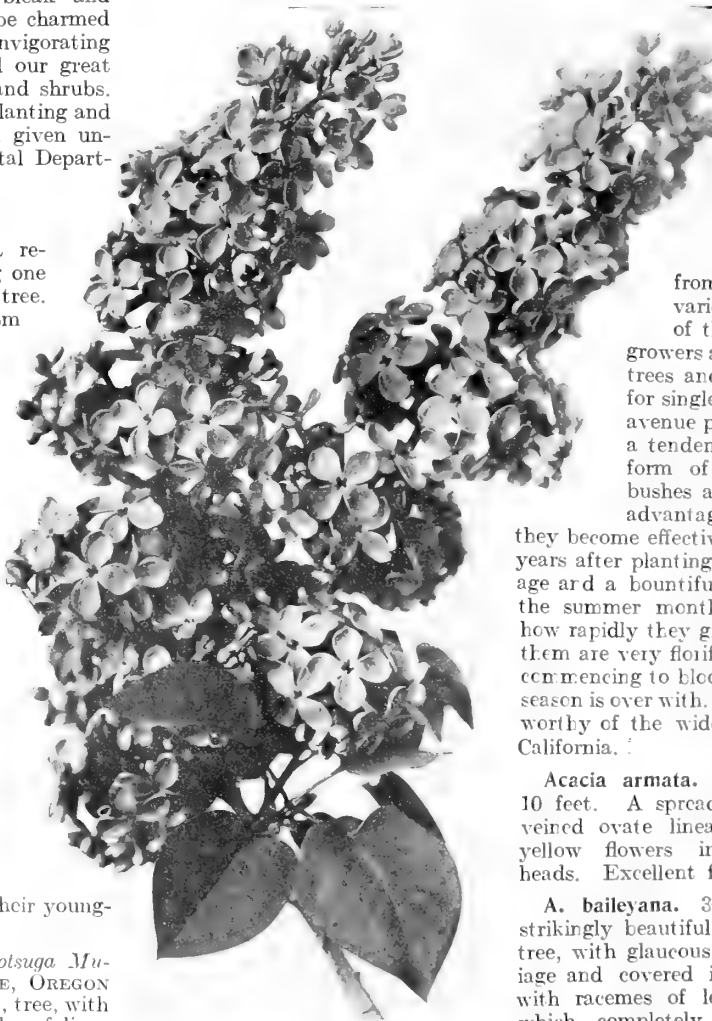
Acacia armata. KANGAROO THORN. 10 feet. A spreading shrub with one veined ovate linear leaves and small yellow flowers in solitary globular heads. Excellent for grouping.

A. baileyana. 30 feet. This is a strikingly beautiful moderate growing tree, with glaucous green pinnated foliage and covered in the early spring with racemes of lemon-yellow flowers which completely envelop the tree. Quite hardy, a magnificent specimen or avenue tree, blooming earlier than any other Acacia.

A. cultriformis. KNIFE-LEAVED ACACIA. 8 feet. More of a shrub than a tree; leaves of a triangular shape, thick glaucous green; a very profuse bloomer, flower heads in axillary racemes. An odd but very interesting and beautiful shrub.

A. cyanophylla. BLUE-LEAVED WATTLE. 25 feet. Flowers yellow; leaves very large; often one foot long; glaucous green, almost blue; branches drooping.

A. dealbata. SILVER WATTLE. 60 feet. A fine, rapid-growing tree, with glaucous or hoary feathery foliage, and covered in the early spring with racemes of golden yellow flowers. A fine avenue tree.



SYRINGA ROTHOMAGENSIS. ROUEN
LILAC. SEE PAGE 69.

Acacia decurrens. GREEN WATTLE. 75 feet. This rapid and erect growing tree is one of the best of the feathery foliaged varieties for park or avenue purposes. Branchlets with very prominent angles and decurrent from the petioles; leaves feathery, very deep dark green. Flowers whitish yellow, appearing in May.

A. floribunda. (*A. nerifolia*). 30 feet. A rapid growing tree, with a pendulous habit, and with long narrow leaves; flowers in racemes bright yellow. Useful as a street tree.

A. latifolia. 30 feet. Of a drooping spreading habit and very valuable for grouping; foliage glossy green, lanceolate; flowers in pairs, golden yellow. Very effective avenue tree if properly trained.

A. linifolia. 12 feet. A tall shrub, with long, narrow, straight rather thin leaves; flowers head in slender axillary racemes. One of the most desirable varieties for grouping.

A. melanoxylon. AUSTRALIAN BLACK WOOD. 75 feet. A strong, upright-growing tree; very desirable for parks and street ornamentation.

A. mollissima. BLACK WATTLE. 50 feet. A fine, erect, upright-growing tree, with deep dark-green feathery foliage; flowers yellow and borne in racemes in the early spring; a rapid growing tree and well adapted to this valley.

A. pycnantha. GOLDEN WATTLE. 30 feet. Of rapid growth; leaves long and narrow; flowers fragrant, brilliant yellow, coming in long, pendulous clusters.



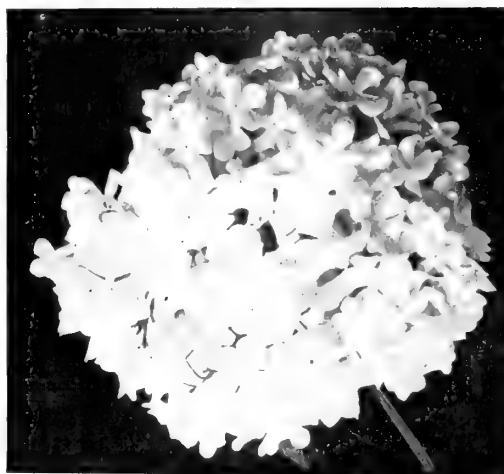
TAMARIX HISPIDA. SEE PAGE 69.

A. salicina. 10 feet. A very free flowering variety; often with 20 flowers in a short raceme; the leaves are lanceolate, narrowed at base, thick, rigid, with a curved point; branches drooping.

A. suaveolens. 12 feet. A large growing shrub, with narrow lanceolate to linear leaves; flowers yellow, borne in short racemes, six to ten in a head.

A. verticillata. 12 feet. A spreading shrub or tree with long linear leaves with 3 to 4 prominent nerves on

each side and with spikes $\frac{1}{2}$ to 1 inch long extending the entire length of the young branches; flowers deep yellow. An excellent variety for grouping.



VIBURNUM TOMENTOSUM PLICATUM. JAPANESE SNOWBALL.
SEE PAGE 69.

ARAUCARIA.

For these magnificent, showy, most stately and beautiful evergreen trees, we are indebted to South America and Australia, but principally to the latter country. Few trees can compete with them for graceful elegance and symmetry and they are therefore not only in great demand for house decoration but are also valuable as specimen trees on lawns, for grouping and avenue planting. The variety most extensively used and most widely disseminated for house decoration is *A. excelsa*, but it does not do well in warm, dry climates, or where there is much frost in the winter. In a cool, mild climate, it grows to perfection. The *A. bidwilli* and *A. imbricata* find congenial conditions in the interior, but they should be shaded for at least eighteen months after planting in the open with a canopy of burlap until they become accustomed to the out-door conditions.

Araucaria bidwilli. BUNYA-BUNYA. Australia. 150 feet. A magnificent tree; branches in regular whorls, closely set with spiny, shining, deep green leaves; very handsome for the lawn and by far the finest and most attractive of all evergreen trees; thrives well here.

A. braziliensis. BRAZILIAN PINE. 70 feet. A fine tree, with open, spreading head, straight stem and pretty; leaves sharp-pointed, light green and glaucous beneath.

A. excelsa. NORFOLK ISLAND PINE. 200 feet. One of the handsomest of all trees; pyramidal in form and very symmetrical. Not hardy in the interior valleys, except as an indoor decorative plant, but grows to perfection in all the coast counties.

A. excelsa robusta compacta. 20 feet. Differs from preceding in its more robust but at the same time, more compact growth, producing even a more symmetrical plant than *Excelsa*. The color is a rich deep green.

A. imbricata. CHILI PINE, OR MONKEY PUZZLE. 100 feet. A fine tree of regular pyramidal form; leaves bright green, broad, thick, pointed and overlapping each other.

ARBUTUS. The Madrone.

Arbutus menziesii. MADRONE. 75 feet. The well-known native tree growing so abundantly in Coast Range; foliage thick, leathery, bright green; bark smooth, brownish red; flowers white, fragrant, succeeded by red berries.

CAMPHORA. The Camphor Tree.

Camphora officinalis. CAMPHOR TREE. China, Japan. 40 feet. A rank-growing, very symmetrical, ornamental tree, thriving in a poor soil; bright green foliage and well adapted for the lawn, street or avenue planting. To prepare the camphor for commerce, the root, trunk and branches are broken up and treated with water in closed vessels, the volatilized camphor being sublimated on rice straw. No garden is complete without it.

CASUARINA. The Beefwoods.

Native of Australia, with extremely hardwood equaling in this respect the walnut and hickory. Its redness has given it the popular name of Beefwood. The branches are long and slender, and weeping with jointed needle like leaves. They are odd but beautiful ornamental trees growing well even in alkali soils. Of very rapid growth.

Casuarina equisetifolia. SHE OAK OR BEEFWOOD. S. E. Australia, 50 feet. Of very rapid growth, branches drooping, leaves dark green, needle like, sheathed; a very handsome and striking tree; wood valuable for shingles and fuel.

C. stricta. (*C. quadrivalvis*). 75 feet. Is of more erect habit than the preceding. Does not grow as tall. The wood is very tough and is excellent for tool handles.

CEDRUS. The Cedars.

These majestic trees, natives of N. Africa and Asia, with large spreading branches, rigid, scattered and clustered leaves are valuable for the ornamentation of extensive grounds or for lining broad avenues where shade is not the desideratum. The tree does not like pruning either of top or branch and it is most strikingly effective when its lower branches sweep the ground and it rises like a pyramid to the leader.

The catkins appear in autumn and the cones require two years to reach maturity. It is said that the tree must be at least fifty years old before it will develop cones. It thrives well in all parts of California, and in warmer valleys when once established is of very rapid growth.

Cedrus atlantica. MT. ATLAS CEDAR. N. Africa. 120 feet. A very handsome, pyramidal tree, with silvery green foliage; branches have an upright-growing tendency and are very dense; a fine tree for the lawn.

C. atlantica glauca. MT. ATLAS SILVER CEDAR. 100 feet. A very fine, upright grower, of rather more dense habit than the preceding and with almost silvery white foliage. A very handsome tree. A grand lawn tree.

C. deodara. HIMALAYAN OR INDIAN CEDAR. 120 feet. Exceedingly handsome, with drooping branches and silvery-green foliage, forming a dense net work; the finest, most rapid grower of all cedars, and worthy of a place in every garden.

C. deodara verticillata glauca. BLUE CEDAR. 75 feet. One of the most striking and picturesque trees of this grand family. Branches rather irregular and densely

clothed with silvery blue foliage. A grand specimen tree. The most distinct of all Cedars.

Cedrus deodara variegata. VARIEGATED DEODARA CEDAR. 100 feet. This is a fine tree, having the habit of the Deodara; silvery white tipped foliage. Not adapted to the interior.

C. deodara viridis. GREEN CEDAR. 75 feet. Very graceful but of more slender habit than *C. deodara*, foliage a rich lustrous green. A beautiful tree.

C. libani. CEDAR OF LEBANON. 100 feet. Its biblical associations surround this tree with a sacred interest, which naturally appeals to our imaginations and this, combined with its adaptability to almost any soil, its vigorous, sturdy growth and dark green and lustrous foliage, should cause it to be widely planted.

CEPHALOTAXUS. Cluster-Flowered Yew.

Cephalotaxus fortunei. China, Japan. 50 feet. A handsome tree, with yew-like foliage and large plum-like fruit in clusters; branches long, slender and pendulous. Bears a very close resemblance to the Yews but is much more graceful.

CHAMAECYPARIS. Cypress and White Cedars.

This very extensive group of graceful ornamental trees is very closely related to the Cupressus family, they differ chiefly in the time of maturity and size of their cones, being much smaller and maturing the first year, while with the Cupressus it requires two years.

Chamaecyparis lawsoniana. LAWSON'S CYPRESS. 200 feet. Indigenous to California, Oregon. A noble tree and one of the most striking and graceful of evergreens in cultivation. Branches extending horizontally from the main stem and slightly pendulous; foliage dark green with slightly flattened branchlets. Fine for grouping or as single specimens.

C. lawsoniana erecta viridis. 60 feet. Upright, dense columnar habit with bright green foliage.

C. lawsoniana glauca. BLUE LAWSON CYPRESS. 100 feet. Of slender habit with very glaucous almost silvery foliage. A most beautiful tree.

C. lawsoniana lutea. 40 feet. Of compact medium growth with young foliage wholly a light clear yellow.

C. nutkaensis. (*Thuyopsis borealis*). NOOTKA SOUND CYPRESS. 120 feet. A very desirable and beautiful tree, occurring from Oregon to Alaska. It is of pyramidal habit, with light, glossy green foliage, sometimes with bluish shade. Does remarkably well in the interior valleys.

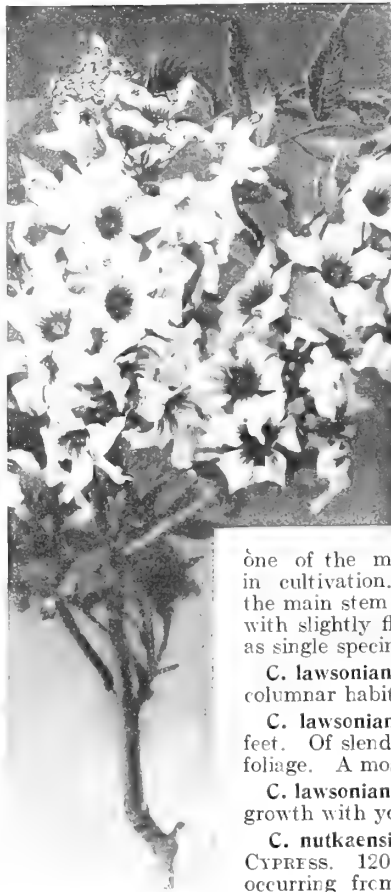
CITRUS. The Oranges.

Citrus amara. SOUR ORANGE, SEVILLE ORANGE. Europe and Florida. 30 feet. Grown very extensively as a stock for budding commercial varieties of citrus trees, on account of its resistance to mal-di-gomma or gum disease. It is a very strong, upright grower, very thorny and with deep green glossy foliage. It produces enormously; the oranges hang very persistently and as an ornamental tree it presents a most pleasing appearance. It is said that this is the variety from which the world famous English marmalade is made. November to April.

C. bouquet des fleurs. FLOWERING ORANGE. Europe. 12 feet. An ornamental variety of French origin, possessing a very thick and leathery foliage, of a light green color and bearing beautiful waxy white flowers.

CRYPTOMERIA. The Japanese Cedars.

The most important timber tree of Japan, used extensively for building, for making barrels, boxes and many



XANTHOCERAS SORBI-FOLIA. CHINESE FLOWERING CHESTNUT. SEE PAGE 69.

other purposes. The wood is tasteless and very durable. In its native home, trees are said to attain a height of 130 feet with trunks 30 feet in circumference.

Cryptomeria japonica. JAPANESE CEDAR. Large, elongated pyramidal tree, with straight slender, tapering trunk; covered with reddish brown bark, with frond like upward spreading branches; branchlets very numerous, usually alternate, bright green. Cones reddish brown, an inch or less in length.

C. japonica elegans. ELEGANT JAPANESE CEDAR. 20 feet. Low dense tree, with horizontal branches and pendulous branchlets; leaves, linear, flattened, soft in texture, autumnal color bronzy-crimson, which is retained throughout the winter.

CUPRESSUS. The Cypress Trees.

This numerous family of trees, with aromatic foliage, seem to adapt themselves to California conditions very well indeed. Some varieties, like the *C. macrocarpa* (Monterey Cypress,) stand pruning well and is very largely used for hedges. They grow very well in the interior valleys. Their native habitat seems to be confined to California and the Gulf States. They are not particular in regard to soil and situation, but prefer deep, sandy loams.

Cupressus arizonica. ARIZONA CYPRESS. 40 feet. A tree of rather moderate growth and of a slender pyramidal habit. Foliage pale, glaucous green and turning brown in the winter months. Quite rare.

C. funebris. FUNERAL CYPRESS. 30 feet. Native of China. A noble tree with wide spreading, drooping branches and branchlets slightly flattened; especially adapted for cemeteries.

C. goveniana. GOVEN'S CYPRESS. 50 feet. Indigenous to the coast regions of California. Of erect growth forming a handsome crown. Foliage dark green and very persistent. Deserves to be widely planted.

C. knightiana. GLAUCA CYPRESS. Mexico. 70 feet. A graceful tree of rapid growth, probably from the high mountains of Mexico. Branches very regularly arranged, drooping, foliage glaucous green. A valuable tree for grouping.

C. macrocarpa. MONTEREY CYPRESS. 70 feet. A native of California and one of the most desirable evergreens. In old age it becomes very picturesque, forming a broad flat-topped crown. Foliage greyish green; stands pruning well; very extensively planted for hedges.

C. macrocarpa guadalupensis. BLUE CYPRESS. Guadalupe Island. 50 feet. Branches spreading, and very conspicuous; on account of its coloring it lends a charming effect when planted among other trees. Does very well throughout California and is always attractive.

C. macrocarpa lutea. GOLDEN MONTEREY CYPRESS. 40 feet. A garden form of the preceding with somewhat

flattened leaves. The spring growth is always suffused with a golden yellow and changing gradually to a light green toward fall.

Cupressus sempervirens. (*C. fastigiata*). PYRAMIDAL ITALIAN CYPRESS. 75 feet. A tall tapering tree with erect branches growing close and parallel with the trunk; branches frond-like and covered with smooth, deep green leaves; very desirable for cemeteries and arches.

ERIOBOTRYA. The Loquat Tree.

A native of China and Japan but much planted in the Gulf States and in California. Its very fragrant yellowish white blossoms borne in clusters, do not appear until November. It is an elegant decorative plant for the house, lawn, or for grouping, the foliage being large, dark, bright glossy green and very much crumpled. Fruits mature in April and May. See also "Miscellaneous Fruits."

Eriobotrya japonica. LOQUAT. 20 feet. A fine ornamental tree, with large crumpled, dark green, glossy leaves, and fragrant white flowers, producing a delicious, sub-acid golden-yellow fruit in the spring.

E. japonica variegata. 10 feet. Same as above, but foliage is variegated.

EUCALYPTUS. The Gum Trees.

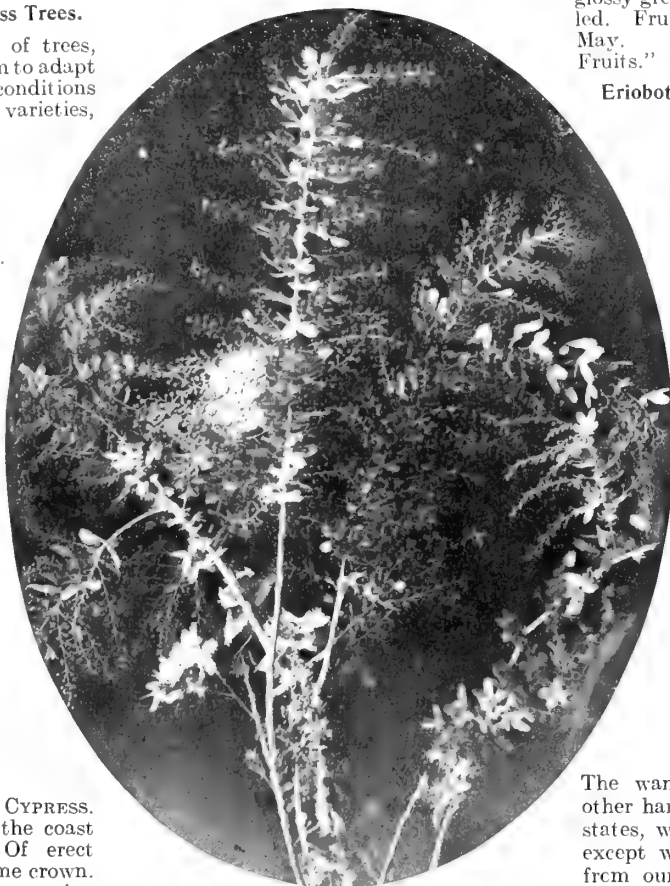
This great Australian tree is at present more extensively planted than all other varieties of deciduous and evergreen trees combined. The economic value of its timber has become well established hence, far-sighted business men are engaging in the planting of eucalyptus trees on a commercial scale on reasonable priced lands throughout California.

The waning supply of hickory and other hard woods in the eastern states, which can not be replaced except with probably the timber from our fast growing eucalyptus (in the culture of which California will have the monopoly), is in itself sufficient encouragement for the widespread interest which is being manifested in its planting. The timber is used by ship-builders, railroad engineers, implement makers and for numerous other purposes. No farm, no matter how small, should be without its eucalyptus trees and this is emphasized particularly where fire-wood is scarce and expensive.

Eucalypts are either transplanted from pots or from flats, the latter being boxes 3 inches deep and about 18 inches square, holding 100 plants. It is not practical to grow trees in the open ground in nursery rows and transplant them, for they will not grow.

WHEN TO PLANT.

Transplanting into the field should not commence before March 1, and it may continue in localities where there are no great extremes of heat until July, although the



ACACIA BAILEYANA. SEE PAGE 70.

early planting is always advisable, the plants getting the benefit of the spring rains and more favorable climatic conditions

HOW TO PLANT.

Above all things have your soil in a high state of tilth by deep plowing and thoroughly working with a harrow. The thoroughness of this work will have much to do with

fer from the flats, first remove a side-board and then cut out each plant with a square of earth. Never pull them out by the roots. Use a trowel for transplanting and set the plants an inch deeper than they stood in the box. After the plant is set press the soil around the block of earth using proper care not to break it. Each plant should be watered with a watering can, to further settle the dirt and start the plant on its career. The following day loosen up the soil with a hoe. Watering should follow at intervals of not more than ten days, unless rains

should intervene. Until the plants commence to grow, watering in the manner described is preferable to irrigating in furrows.

During the summer months the plants should be maintained in an active state of growth by irrigation and cultivation; the larger and stockier the seedlings, the more resistant they will be to frost.

One of the great difficulties experienced in a eucalyptus grove, is to get the seedlings to grow straight. Staking a large grove is an expensive operation. *To overcome this difficulty, cut the trees off within an inch of the ground the following year, just before the new growth starts.* Allow all sprouts to grow to begin with, then select the strongest and remove all others. This shoot will make a remarkably vigorous growth and will require no staking. Do not cut off the laterals branches the second year as this will cause the trees to grow spindling and retard root development. In the third year the laterals may be removed if they interfere with cultivation up to a height of three feet, and where there are two leaders, one should be cut out. Under ordinary conditions, they will practically care for themselves after the third season, although cultivation and irrigation will have a decided influence on the more rapid development of the trees.

Eucalyptus calophylla. 25 feet. A moderate sized tree and in appearance differing from most other eucalyptus. The bark is rough and brownish in color. The leaves are dark green and glossy above and feather-veined, their appearance giving the tree its specific name calophylla, the green for "beautiful leaves." Flowers are unusually large, cream colored in large clusters. The urn-shaped seed cones are very large, so much so that they have been polished and used for pipe bowls.

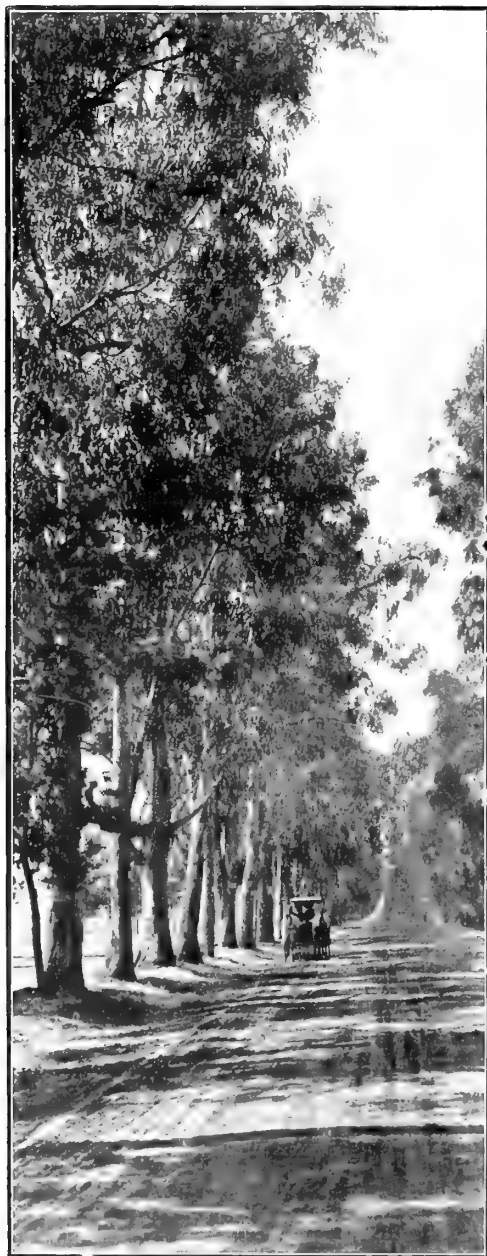
E. citriodora. LEMON-SCENTED GUM. Queensland. 150 feet. Very valuable on account of its flexible, strong and durable timber. Is used for ship-building, interior finish, carriage making, etc. In great demand where strength and elasticity are required. A very rapid grower but is sensitive to low temperature, so should not be planted in the interior valleys. The foliage possesses a pleasant odor, closely resembling that of a lemon, hence the name.

E. cornuta. YATE GUM. 75 feet. Low spreading tree, with more or less uneven bark, younger branches smooth; the foliage is abundant; the flowers are large, quite conspicuous and in compact clusters, the two combinations giving a very attractive aspect to the tree. A valuable low wind break and shade tree. Does best in rich moist soil. The wood is hard, tough and elastic, and is adapted for agricultural implements, vehicles and all kinds of wood work.

E. corynocalyx. SUGAR GUM. S. Australia and Victoria. 120 feet. Very beautiful, upright grower, with distinct rounded leaves when young, but which in later years become acute lanceolate. It is readily recognized by its bright, shiny leaves, which have the appearance of being varnished. Its timber is very durable, is used for railroad ties, posts and other underground situations. A grand avenue tree.

E. crebra. NARROW-LEAVED IRON BARK. 150 feet. Its narrow, small, apparently delicate foliage would lead the uninitiated to believe that the tree was of a delicate nature. For poles, masts and piles, it probably stands out very prominently as one of the standard sorts. Extremely hardy and at the same time withstanding great extremes of heat, it is worthy of general culture in our valley where it grows to perfection. Trees 100 feet high will not average over one and one-half feet in diameter, Its wood is very hard and elastic and so very heavy that its common name is certainly not a misnomer.

E. ficifolia. CRIMSON-FLOWERING. S. W. Australia 20 feet. A most striking variety of dwarfish habit, with very large, dark green leaves, and producing large pan-



EUCALYPTUS GLOBULUS. THE BLUE GUM.
SEE PAGE 75.

the subsequent growth of the trees. In laying off the ground, follow the same plan as directed under the head of "The Grape." The most favorable distance to plant is either 6 by 6 feet or 8x8 feet with the preference for the latter distance. When taken from the nursery, the flats should be given partial shade for a week to cause them to harden up, before taking them to the field. The day before transplanting to the field water them well. To trans-

icles of brilliant scarlet flowers; one of the most ornamental and effective trees among the eucalyptus; very desirable for small gardens.

Eucalyptus globulus. BLUE GUM. 200 feet. Derives its common name undoubtedly from its broad, bluish leaves which it retains until three years of age, when it changes its character entirely, its leaves becoming of a reddish cast, lanceolate and thick. Has been more extensively planted than any other variety of eucalyptus and is worthy of holding a leading place in all groves. The wood partakes of a very high polish, resembling hickory when finished. Its value for wagon work, bridge building, tool handles, insulator pins and as fire wood, has been fully established.

E. leucoxylon rosea. SOUTH AUSTRALIAN BLUE GUM. 75 feet. A rapid growing tree, will adapt itself to a greater variety of climates than any other eucalyptus, being as much at home at the coast as it is in the interior. It will grow under conditions where the ordinary Blue Gum will fail utterly, enduring temperatures as low as 15 Fahrenheit without any sign of injury. It supplies an excellent timber and makes good fuel. The foliage has a pleasing bluish cast and the wood is white and very straight grained. Flowers in clusters light pink to scarlet.

E. pilularis. BLACKBUTT. 150 feet. Slender growth, very retentive of foliage close to the ground. The flowers are in clusters of from 4 to 16. Especially valuable for telegraph poles on account of its very slender growth. Considered to be one of the best all around timber trees of Australia. A fine honey tree.

E. polyanthema. RED BOX. 100 feet. As an avenue tree, this is fully equal to the Rudis but of much slower growth. Its leaves are always round with a silvery luster. A great resister of drought and cold, being a very late bloomer, blossoming from late fall and even during the winter months. The timber is very hard and durable and in Australia it is extensively used for wagon work, spokes, etc. Has been found to be a valuable variety in the San Joaquin Valley and is considered to be one of the best sorts in Arizona.

E. resinifera. RED MAHOGANY. A very erect symmetrical tree, attaining a height of 100 feet. The tree furnishes a very valuable hard wood of a rich red color, resembling true mahogany, and is very heavy, hard and durable. Is used for piles, posts, paving and general building purposes and makes the most beautiful furniture, taking on a fine polish. Should not be planted in localities subject to severe frosts.

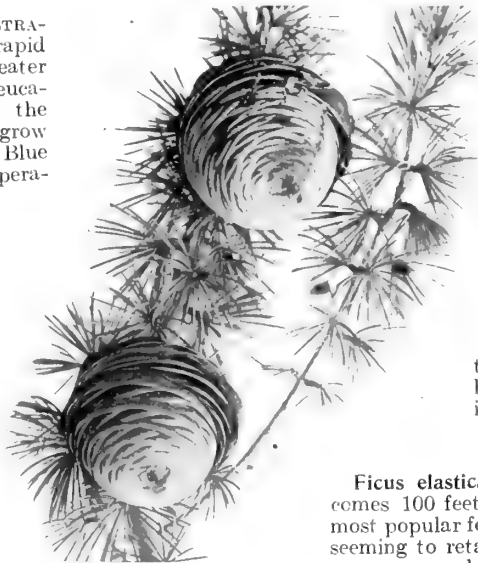
E. robusta. SWAMP-MAHOGANY GUM. New South Wales. 100 feet. Well adapted to low ground and also to the driest locations; very symmetrical while young; quite brittle as it grows older; branches directly opposite in regular whorls; foliage large, of a deep glossy, green color; flowers, large, creamy-white; blooms late in the fall; very much prized by apiarists.

E. rostrata. RED GUM. Said to attain a height of 200 feet and more. Sends up a strong, straight leader and is a remarkably rapid grower, and in the interior valleys is not exceeded even by the Blue Gum in its growth. The wood takes on an exceptionally high polish, is well adapted for interior finish and is recognized by the trade name of "Red Mahogany." The durability of its timber

makes it exceedingly valuable for ties, fence posts, piles, etc.

E. rudis. 100 feet. This has been grown very extensively around Fresno, where it has been found to make an excellent avenue tree and also to be of very rapid growth. Its bark is quite persistent. It withstands both heat and cold and in Arizona its suitability to their conditions has been fully established. It is a very rapid grower and the wood is quite hard and tenacious.

E. tereticornis. FOREST RED GUM. 150 feet. This is fully as rapid a grower as the *E. rostrata*, relatively of the same commercial importance except that the timber is somewhat more durable, and it will thrive in soil which is inclined to become rather damp. It is said by some authorities in Australia to lead all other varieties as a commercial timber tree.



CEDRUS DEODARA CONES.
SEE PAGE 72.

E. viminalis. MANNA GUM. 100 feet. A rapid growing variety and very hardy; on rich soil it grows to a gigantic size; the young bark and leaves yield Australian Manna, a hard, opaque, sweet substance. It is used principally for shingles, rough building material and for fuel. As a picturesque avenue tree it has few superiors sending down long branches twenty to thirty feet long, which hang like immense festoons, giving it a very graceful appearance.

FICUS. The Rubber Trees.

Ficus elastica. INDIA RUBBER PLANT. Becomes 100 feet high in the tropics. One of the most popular foliage plants for inside decoration, seeming to retain its bright, attractive appearance, even when neglected; leaves large, dark, shining green above and yellowish-green below. Can not be grown out of doors, except in the southern coast counties.

F. macrophylla. MORETON BAY FIG. Australia. 80 feet. Hardier than above and with somewhat smaller leaves; valuable as a decorative plant. Much planted in southern and middle California where it forms a fine compact tree. In Australia, it is regarded as the grandest of all decorative and avenue trees.

GREVILLEA. The Silk Oak.

Grevillea robusta. SILK OAK. AUSTRALIAN FERN TREE. Australia. 100 feet. A very graceful, ferny-leaved tree of rapid growth, covered in the early summer months with large golden yellow combs of flowers and very attractive to honey-sucking birds and bees. Resists drought to a remarkable degree. Does remarkably well in all parts of California, and is one of the most stately avenue and lawn trees in the interior. When young, from two to five feet high, it makes a most graceful subject for house decoration.

ILEX. The Holly Trees.

The common holly with its innumerable varieties is well known. It thrives well in the coast counties, but in warm dry climates it must be shaded for a few years until it becomes established, otherwise it will sun-burn. Very desirable for planting in groups on account of the brilliancy of its foliage. The red berries contrasting with the dark green foliage, throughout the winter, cause it to have a very pleasing appearance, and the branches are in great request for Christmas decoration.

Ilex aquifolium. EUROPEAN HOLLY. Europe and Asia, 40 feet. A small tree, with shining, dark green thorny

leaves, somewhat resembling the oak in form; in winter the tree is covered with bright red berries.

Ilex aquifolium aureo-maculata. GOLDEN VARIEGATED HOLLY. 25 feet. Leaves with a large blotch of creamy yellow surrounded by a green border.



THUYA ORIENTALIS PENDULA. WEEP-
ING ARBORVITÆ. SEE PAGE 79.

I. aquifolium aureo-regina. VARIEGATED HOLLY. 20 feet. Leaves spiny, toothed, mottled with gray and green, and with a broad yellow border. Very ornamental.

JACARANDA.

Jacaranda mimosæfolia. 50 feet. A most beautiful symmetrical tree with foliage as finely cut as a fern; flowers blue or violet, showy in terminal panicles, appearing in the early summer months. A favorite street tree in Southern California. Should not be planted in localities subject to severe frosts.

JUNIPERUS. The Juniper.

These extremely hardy trees seem to be as much at home in the warm interior valleys as they are in the coast counties. They are very ornamental, mostly of pyramidal or columnar habit, and are very decorative either as single specimens on the lawn or if planted in groups. The low growing species are admirably adapted for covering rocky slopes or sandy banks. They are well adapted for hedges, for planting as shelter or wind breaks; also for seaside planting. The close-grained fragrant wood is much used for the interior finish of houses.

Juniperus bermudiana. BERMUDA JUNIPER. 40 feet. A very beautiful tree, with foliage of a pale bluish-green color, and assuming a densely branched pyramidal form. This tree furnishes the wood used in the manufacture of "cedar" pencils.

J. communis hibernica. IRISH JUNIPER. 40 feet. An erect, dense, conical tree, resembling a pillar of green. It is the handsomest of all varieties of Juniper communis.

J. japonica. JAPAN JUNIPER. 60 feet. A dwarf, dense tree of pyramidal habit, with grayish green foliage. Will thrive in most any soil.

J. japonica aurea. GOLDEN JAPAN JUNIPER. 30 feet. A very attractive variety of moderate growth, and spreading habit, foliage of a beautiful golden color.

J. macrocarpa. (*J. neaboriensis*). LARGE-FRUITED JUNIPER. 12 feet. A dense shrub of pyramidal outline, and from the Mediterranean region. Foliage bluish green, leaves spiny. Thrives well in California.

J. sabina. SAVIN JUNIPER. 8 feet. Low spreading shrub with reclining or trail-

ing branches. Foliage dense, very dark green, exhaling a strong odor when bruised. Thrives best in a light soil and is valuable for rock work.

Juniperus sabina variegata. VARIEGATED SAVIN. 6 feet. Same as above except that the small branchlets are variegated with creamy white.

J. virginiana. RED CEDAR. U. S. 100 feet. A well-known ornamental tree; usually of pyramidal form and densely clothed with green or bronze-green foliage. Its timber has an aromatic fragrance and is largely employed in the manufacture of utensils.

LIBOCEDRUS. The Incense Cedar.

A valuable park tree and for single specimens on a large lawn. It forms a symmetrical, narrow pyramid, with bright green foliage. It is a very important timber tree, the wood being light, soft, close and straight grained, is very durable in the soil, and is used for fence posts, for shingles and for the interior finish of houses.

Libocedrus chilensis. CHILEAN CEDAR. 60 feet. Foliage glaucous green; branches spreading, pendulous, ascending towards the summit, and quite erect at the top.

L. chilensis variegata. VARIEGATED CHILEAN CEDAR. A form of the above kind, with golden variegated branchlets.

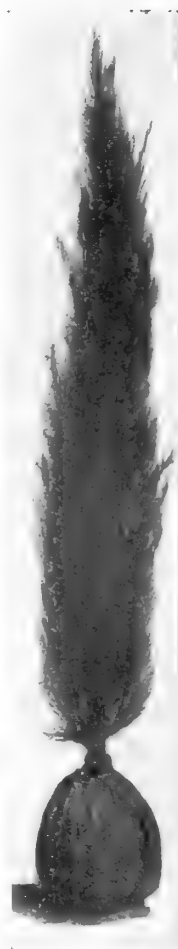
L. chilensis viridis. GREEN CHILEAN CEDAR. 50 feet. Another handsome form of the same type having bright green foliage.

L. decurrens. INCENSE CEDAR. 100 feet. A very ornamental, distinct, erect, compact growing tree, with a stout trunk; branches a bright, rich, glossy green, glaucous underneath; a native of the mountain regions of California and Oregon. Does exceedingly well on the coast and in the interior.

MAGNOLIA. The Evergreen Magnolias.

A native of the extreme southern states, reaching the greatest perfection in Louisiana along the Mississippi and recognized as one of the grandest of all broad-leaved evergreen trees. In its native habitat it often attains a height of 100 feet. The flowers are extremely fragrant, measuring from 10 to 12 inches across. They bloom very abundantly in May and June and have a scattering of flowers all through the fall. The flowers are succeeded by cone-like fruits from which seeds of the deepest coral red issue in October. Does fully as well in the coast counties as in the interior. A grand avenue, park or lawn tree.

Magnolia grandiflora. BULL BAY. 80 feet. The most noble of American evergreen trees; foliage is thick, brilliant green on the upper surface and



CUPRESSUS FASTIGIATA. PYRAMIDAL ITALIAN CYPRESS.

SEE PAGE 73.



CEDRUS DEODARA. HIMALAYAN CEDAR.
SEE PAGE 72.

rusty underneath; the flowers are pure waxy white, of immense size and very fragrant.

Magnolia grandiflora exoniensis. EXMOUTH MAGNOLIA. 20 feet. Bears large, pure white, double flowers when only a few feet high; the hardiest variety of magnolia, succeeding in localities where others fail entirely.



PINUS PINEA.
STONE PINE.

M. grandiflora galissoniensis. GALISSON MAGNOLIA. 60 feet. A hardy variety, leaves with upper surface glossy green, under surface russet brown.

PARKINSONIA. The Jerusalem Thorn.

Parkinsonia aculeata. JERUSALEM THORN. 40 feet. A very rare, odd and beautiful thorny tree with pine-like leaves and feathery drooping branches, flowers an inch across, yellowish. Will thrive in the driest locations. As a specimen tree or for lawns it always attracts attention.

PICEA. The Spruces.

In habit of growth very similar to the firs but the branches stand out from the main stem more horizontally, they are not so close together and the trees present a more airy appearance. They are distinguished from the firs mainly through the fact of their drooping cones and with their linear flat leaves on the upper side of the branches.

Picea alba. WHITE SPRUCE. 70 feet. A native tree of the great northwest. Foliage silvery-grey, exhaling a strong aromatic odor when bruised; cones 1 to 2 inches long, glossy brown.

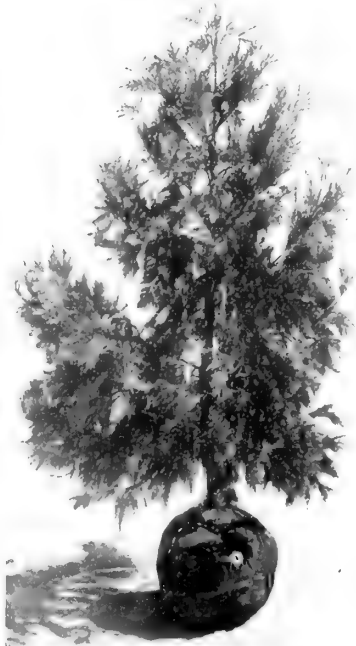
P. excelsa. NORWAY SPRUCE. 150 feet. Northern and Middle Europe. An elegant tree, a lofty, rapid grower and probably the most widely cultivated of all the spruces; the branches assume a graceful, drooping habit when the tree is 20 feet high. Cones 5 to 7 inches long.

P. menziesii. SITKA SPRUCE. 100 feet. A hardy and beautiful spruce having a habit similar to the White Spruce; foliage rich blue or sage color, a striking sort.

P. orientalis. ORIENTAL SPRUCE. Western Asia. 100 feet. A graceful tree; foliage dark, glossy green, densely appressed to the branches on all but the lower sides. Cones 3 to 4 inches long, violet purple, eventually changing to brown. Very ornamental.

P. pungens. COLORADO SPRUCE. Rocky Mountains. 80 feet. A beautiful tree with branches distributed in regular whorls, which gradually recede as they tend upwards forming a grand tree with a conical outline. Leaves glaucous green with pointed spines. One of the best.

P. pungens glauca. COLORADO OR KOSTER'S BLUE SPRUCE. 40 feet. One of the most beautiful of spruces as single specimens or for grouping. Foliage silvery blue densely disposed on the numerous branchlets. Has probably attracted more attention than any other variety of spruce in recent years.



LIBOCEDRUS DECURRENS.
INCENSE CEDAR. SEE PAGE 76.

PINUS. The Pines.

The family of pines is probably one of the most important of timber trees. The trees are usually tall with spreading branches forming a pyramidal or rounded-top and becoming very picturesque in old age. They are much used for subduing shifting sands and for seaside planting. They are all valuable for the decoration of parks, gardens, and for grouping among other trees.

Pinus austriaca. AUSTRIAN OR BLACK PINE. 100 feet. A robust, hardy, spreading tree from Dalmatia; leaves in pairs, about 4 inches long, rigid, very dark green. Cones 2 to 3 inches long, glossy yellowish brown. Thrives in even the most exposed situations.

P. coulteri. BULL PINE. BIG CONE PINE. California. 80 feet. Tree with stout branches, pendulous below and ascending above forming a loose pyramidal head; a handsome and distinct tree; cones 12 inches long and 6 inches in diameter, weighing between 4 and 5 pounds.

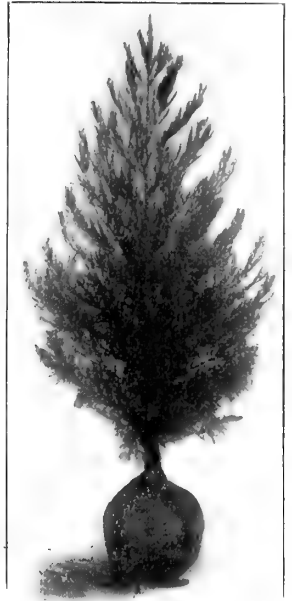
P. halepensis. ALEPPO PINE. Mediterranean region. 60 feet. A fine variety, with dense, bluish foliage. A very valuable variety in the interior.

P. insignis. MONTEREY PINE. 80 to 100 feet. A very fine pine, a native of California, being particularly well adapted to our coast counties, thriving best where it gets the benefit of the coast breezes. It is of pyramidal habit, with dark, deep green, slender, flexible leaves. In the interior valleys where irrigation is practiced it dies out within ten to twelve years.

P. lambertiana. SUGAR PINE. California. 100 to 300 feet. The tallest of all pines; has an enormous girth, the massive perpendicular trunk being generally bare of branches two-thirds of its height from the ground. Presents an elegant appearance when young. Leaves dark bluish green, 4 to 5 inches long in whorls of 5. Cones 1½ feet long. Its timber is the most valued of all pines in California.

P. laricio. CORSICAN PINE. 40 feet. Southern Europe. Is easily recognized by its straight, erect habit, and the tendency of the branches to curve in a direction round the tree. Forms a symmetrical pyramid. Leaves in pairs 4 to 6 inches long, dark green. Cones glossy, yellowish brown, 2 to 3 inches long. Does well in rich soils and low situations.

P. montana. SWISS MOUNTAIN PINE. Mountains of Middle Europe. 40 feet. A handsome, low-growing, spreading tree or shrub with bright green leaves from 1 to 2 inches long. Ornamental as single specimens and for a decorative base to large growing groups of trees



SEQUOIA GIGANTEA.
CAL. BIG TREE. PAGE 78.

Pinus pinaster. (*P. maritima*). CLUSTER PINE. Southern Europe. 100 feet. A beautiful tree of variable habit, bark deeply furrowed; leaves stiff, 6 to 9 inches long, twisted bright glossy green. Very valuable for seaside planting.

P. pinea. PARASOL OR STONE PINE. South Europe. 60 feet. This very picturesque tree thrives best in a sandy soil in a sheltered situation, branches spreading like a parasol and usually confined to the top of the tree. Cones chestnut brown, seeds edible. A feature of the landscape in southern Italy.

P. ponderosa. YELLOW PINE. 150 to 250 feet. A noble tree; a rapid grower and perfectly hardy. Leaves 5 to 11 inches long in whorls of three. One of the great timber trees of California. The bark is divided into large, flat, smooth plates.

P. pungens. TABLE MOUNTAIN PINE. U.S. 30 feet. A medium sized tree with stout horizontal branches, forming an open, flat topped crown. Leaves in pairs, $1\frac{1}{2}$ to 3 inches long, twisted, dark green. Cones brown, 3 inches long.

P. strobus. WEYMOUTH PINE. U.S. 120 feet. A tall, beautiful tree, branches horizontal in regular whorls forming a symmetrical pyramidal crown. Leaves in fives, soft bluish green, 3 to 4 inches long. Cones pendent 5 to 6 inches long. Adapts itself to a variety of situations.

P. sylvestris. SCOTCH PINE. Europe and Asia. 70 feet. A fine, robust-growing tree, with pendulous branches and of pyramidal outline. Leaves in pairs, twisted, bluish green, 2 to 3 inches long. Cones reddish brown 2 inches long. This is one of the chief timber trees of Europe and is frequently planted as a screen in sand-dune regions.

QUERCUS. The Evergreen Oaks.

The evergreen oaks are among our most picturesque trees. The *Q. agrifolia* with its bright, dark green foliage relieves the bareness of the hills during the summer months; in addition to this on the deep rich valley lands it makes a fine low spreading tree, always effective. In late years more attention has been given to the oak for avenue and park planting. We can recommend the tree highly for both purposes.

Quercus agrifolia. CALIFORNIA LIVE OAK. 50 feet. This is the well-known, majestic, evergreen growing so abundantly along the shores of San Francisco Bay.

Q. ilex. HOLLY OR HOLM OAK. 60 feet. A variety of the European Evergreen Oak, of medium size and very upright growth. A beautiful tree for grouping.

Q. suber. CORK OAK. S. Europe. N. Africa. 50 feet. A very ornamental and upright growing variety of evergreen oak; thrives well here; the outer bark furnishes the cork of commerce. A magnificent tree for avenues, parks or street planting.

RETINOSPORA. The Japanese Cypress Trees.

These are dwarf growing trees of the Cypress genus and make beautiful specimen plants under favorable climatic conditions. Do not grow well in the interior, it being too hot.

Retinospora ericoides. JAPANESE CYPRESS. 6 feet. A dwarf tree with bright green branches above and glaucous

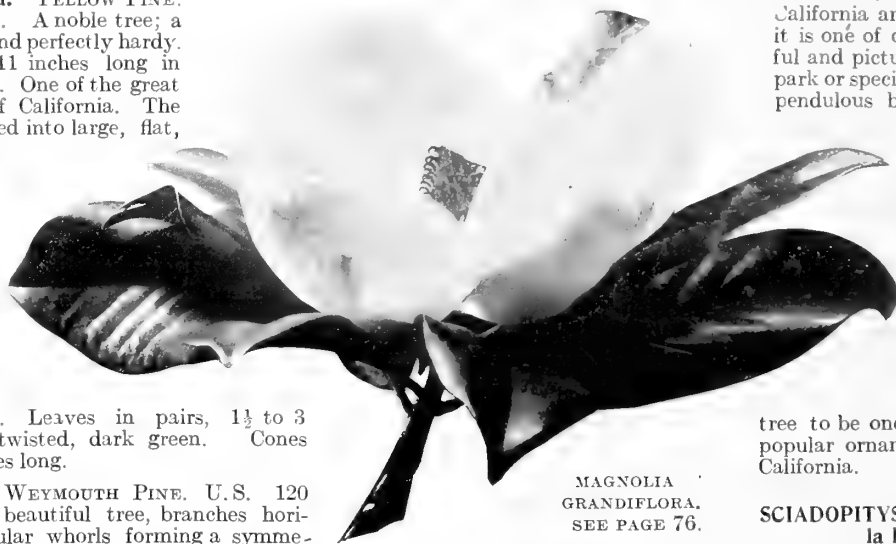
beneath, assuming a ruddy tint in winter; very ornamental. This is one of the trees so extensively used by the Japanese for training into picturesque shapes.

Retinospora plumosa aurea. GOLDEN JAPANESE CYPRESS. 4 feet. A dense growing species with more conical habit than the preceding. Young shoots and foliage of a golden yellow color.

SCHINUS. The Pepper Tree.

Schinus molle. CALIFORNIA PEPPER TREE. Peru. 50 feet. This ornamental tree has been one of the greatest attractions of southern California and justly so, for it is one of our most graceful and picturesque avenue, park or specimen trees. Its pendulous branches, feathery foliage, panicles of yellowish white blossoms, followed by rose colored, to deep red berries half the size of peas, present a series of combinations, causing this

tree to be one of the most popular ornamental trees of California.



MAGNOLIA
GRANDIFLORA.
SEE PAGE 76.

SCIADOPITYS. The Umbrella Pine.

Sciadopitys verticillata. UMBRELLA PINE. Japan. 100 feet. A very handsome tree, of slow growth; the branches are arranged in regular whorls and are covered with deep green, lustrous, narrow leaves 3 to 5 inches long; a fine lawn tree. Not adapted to the interior valleys unless planted in a shady spot, but does remarkably well in the coast counties.

SEQUOIA. The California Big Trees and Redwoods.

People have traveled thousands of miles to see these famous world renowned trees. The *S. Gigantea* is extant only in the Sierra Nevada Mountains, California, and only in isolated groups. They attain a height of 300 feet and a few specimens a diameter of 33 feet. Monarchs of the forest they rise like gigantic tapering pillars with not a branch to mar their symmetry up to 150 to 200 feet. The deep reddish bark on these giants is from one to two feet thick. Their age is a matter of guess work but it is calculated into thousands of years. This variety adapts itself to a wide range of locations, grows as far north as New York and has found conditions favorable to its successful culture throughout central Europe. The *S. sempervirens*, the California Redwood, is confined to the Coast Range and occupies a strip of land 500 miles long and extending more than 20 miles inland. Among the world's famous timbers, this Redwood stands well in the lead for building purposes. It does not attain the size of the *Gigantea*, nevertheless trees 15 feet in diameter are not uncommon. Its wood is far more durable and it is in every respect very much superior for building purposes to its closely related neighbor.

Sequoia gigantea. CALIFORNIA BIG TREE. 300 feet. A magnificent avenue, park or specimen tree, rising like a tapering pyramid, the lower branches sweeping the ground. Foliage bluish green, completely covering the branchlets. Cones 2 to $2\frac{1}{2}$ inches long. An excellent ornamental tree either for the coast or interior.

Sequoia sempervirens. CALIFORNIA REDWOOD. 200 to 300 feet. A valuable ornamental tree, of rapid growth and of a tapering pyramidal habit. Does remarkably well in all parts of California and makes a beautiful avenue or specimen tree. Branches stand out horizontally from the main stem, the lower ones hanging down gracefully and intermingling. Leaves dark green with two pale bands beneath. It finds great favor in Europe and should be more widely used in California.

S. sempervirens pyramidalis compacta glauca. Same as the preceding with the exception that it is more compact and of a beautiful glaucous blue color.

STERCULIA. The Bottle Trees.

Sterculia acerifolia. (*Brachychiton acerifolium*) FLAME TREE. 50 feet. A sturdy tree of pyramidal habit with large light green, deeply lobed maple-like leaves. Produces masses of scarlet flowers, which are thrown out well above the leaves. Should not be planted in localities where there are severe frosts.

S. diversifolia. VICTORIAN BOTTLE TREE. 60 feet. This magnificent street and avenue tree, as its effective and ornamental qualities are becoming established, continues to be in great demand. One great point in its favor is that its roots do not interfere with the pavements in city streets and this one fact adds to its value. Its graceful tapering habit of trunk and foliage gives it a supremacy over many other trees. Its foliage, which is bright glossy-green, is constantly changing in shape, sometimes ovate, then ovate-lanceolate, and again 3 to 5 lobed on the same tree.

S. populneum. POPLAR LEAVED. 60 feet. In habit of growth identical with the preceding with the exception that the leaves are shaped like those of the poplar. The foliage is constant, never varying in form. A noble tree.

TAXUS. The Yews.

The Yew is of geological antiquity and it is said to have formed part of the forest of Britain at a period long anterior to historic times. They are very desirable evergreens for park planting, being densely clothed with dark green foliage. They thrive best in a moderately moist, sandy loam and endure shade well. The wood is heavy, hard, close-grained, strong, elastic and of reddish color, and is highly valued for cabinet making. In warm dry climates they must be shaded the first year.

Taxus baccata. ENGLISH YEW. 40 feet. A densely-branched, spreading bush, of a dark, somber hue; one of the best evergreens for clipping into artificial forms.

T. baccata argentea. (*T. elegantissima*). DWARF GOLDEN YEW. 20 feet. One of the most valuable golden-leaved evergreens; the leaves of the new growth are of a bright straw color; rendering the plant highly effective; of slow growth.

T. baccata fastigiata. (*T. hibernica*). IRISH YEW. PYRAMIDAL YEW. 40 feet. An upright growing variety with deep, dark-green foliage; branches erect, closely compressed, forming a head which has the appearance of a dark, deep green column. A very distinct and beautiful variety.

T. baccata fastigiata variegata. VARIEGATED PYRAMIDAL YEW. 20 feet. Same habit as the above but having a portion of the foliage striped and margined with silvery white or pale straw-colored blotches.

THUYA. The Arborvitae.

The Thuyas are all of regular, symmetrical habit and are great favorites for formal gardens. They are rounded more or less, pyramidal in habit and are well suited for massing or borders, also for hedges and wind-breaks. They bear pruning well. The Chinese varieties are somewhat dwarfish in habit and are therefore suitable for plant-

ing in small gardens. Their beauty is marred if their lower branches are cut off and their trunk is exposed.

Thuya occidentalis. AMERICAN ARBORVITAE. 60 feet. A beautiful native species commonly known as the White Cedar; especially valuable for screens and hedges. Foliage bright green, yellow green beneath, in winter assuming tones of brown or bronze.

T. occidentalis hoveyi. HOVEY'S GOLDEN ARBORVITAE. 10 feet. A seedling of the American, of dwarf habit, globular outline and bright green foliage. Very distinct and well adapted for small gardens.

T. orientalis. (*Biota orientalis*). ORIENTAL ARBORVITAE. Asia. 25 feet. Low bushy pyramidal tree. Foliage bright green turning from bronze to brown in the winter. Very desirable as a single specimen tree or for hedges. The three following are garden forms of this variety.

T. orientalis aurea. ORIENTAL GOLDEN ARBORVITAE. 10 feet. One of the most elegant and justly popular varieties very compact and regular in habit; the foliage assuming a beautiful golden tint in the spring.

T. orientalis pendula. (*T. filiformis*). WEEPING OR THREAD-BRANCHED ORIENTAL ARBORVITAE. 15 feet. A beautiful weeping variety with a straight trunk and pendulous thread-like branches and with leaves wide apart and acuminate; foliage light yellowish green. Very graceful and handsome.

T. orientalis semperaeurescens. EVER-GOLDEN ORIENTAL ARBORVITAE. 12 feet. A new variety of dwarf habit, but of free growth; retains its golden tint the year round; one of the very best of the variegated evergreen trees.



SCHINUS MOLLE. CALIFORNIA PEPPER TREE. SEE PAGE 78.

T. plicata. (*T. gigantea*). California. 100 to 150 feet. A fine graceful Arbor Vitae, indigenous in California. Branches spreading, slender, regularly and closely set; foliage bright green and glossy above and dark green beneath; trunk buttressed and clothed with cinnamon bark.

THUYOPSIS. The Japanese Thuyas.

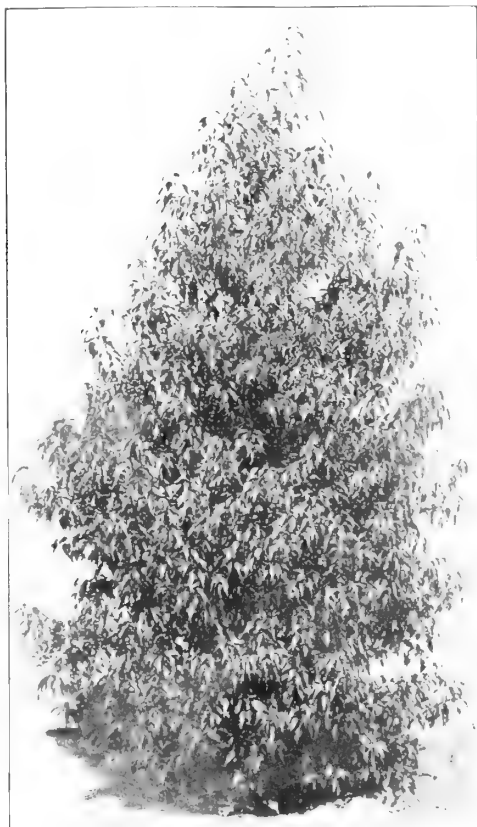
These beautiful conifers are well adapted for planting as single specimens on the lawn or for grouping among other evergreen trees of slow growth. They thrive best in a sheltered and shaded position. They grow to perfection only in moist, cool climates and will stand extremes of cold.

Thuyopsis dolobrata. HATCHET-LEAVED ARBORVITAE. 15 feet. A most peculiar looking tree or shrub from Japan; leaves shining green above, silvery white beneath and very much flattened; of a pendulous and dwarfish habit.

T. dolobrata variegata. VARIEGATED AXE-LEAVED ARBORVITAE. 8 feet. Same as the above, only that the ends of the branches are tipped with a pale yellow color.

TORREYA. The Nutmeg Cedars.

These beautiful Yew like trees are well adapted to California conditions. Their foliage effects are fully equal to the Firs and they have the advantage of not being effected by the extremes of heat in the summer months.



STERCULIA DIVERSIFOLIA. VICTORIAN BOTTLE TREE.
SEE PAGE 79.

Torreya californica. (*T. myristica*). CALIFORNIA NUTMEG. 75 feet. A handsome, yew-like tree, forming a compact head and producing a nut very much resembling the nutmeg of commerce. The leaves are dark green and lustrous 1 to 3 inches long.

T. nucifera. JAPANESE NUTMEG CEDAR. Tree varies from 30 to 80 feet high; branches in regular whorls with yew-like aspect; leaves leathery, about an inch long, dark green, paler beneath; nuts oval about an inch long. The bark is bright red, contrasting strongly with the foliage.

UMBELLULARIA. The California Laurel.

Umbellularia californica. CALIFORNIA LAUREL OR BAY TREE. 80 feet. A very rapid growing tree with glossy lanceolate oblong leaves. Along the coast near water courses it grows to perfection and makes a strikingly handsome tree. The foliage emits an agreeable perfume when bruised.

EVERGREEN SHRUBS.

ABELIA. The Free Flowering Abelias.

These very fine flowering shrubs should have a place in every garden, for they seem to thrive under the most adverse conditions. Their shining green leaves, pendulous branches, which are clothed with small bell shaped flowers from early summer until late fall, makes them valuable decorative plants wherever they are planted.

Abelia floribunda. MEXICAN ABELIA. 3 feet. A dwarf shrub with shining green leaves and pale pink flowers borne in clusters during the entire summer.

A. grandiflora. (*A. rupestris*). HYBRID ABELIA. 6 feet. A garden hybrid. A pretty shrub of straggling growth, bearing small, fragrant, tube-like flowers during the entire summer, color light rose on the outside and white on the inside. Deserving a place in every garden.

ARALIA. The Evergreen Aralias.

The Aralias, with the exception of *A. papyrifera*, are only adapted for house or conservatory culture. They are very pretty decorative plants and do remarkably well indoors.

Aralia papyrifera. (*Falsia papyrifera*). RICE-PAPER PLANT. China. 12 feet. A very tropical looking small tree or shrub with very large, deeply lobed leaves light green above and downy beneath. It is of very easy culture and is so effective within a short time that it deserves to be generally planted.

A. sieboldii. (*F. japonica*). JAPANESE ARALIA. Japan. 4 feet. A beautiful plant, with large, glossy palmate leaves.

A. sieboldii variegata. JAPANESE VARIEGATED ARALIA. 4 feet. Same as the preceding, except that the leaves are broadly marked with creamy white.

ARBUTUS. The Strawberry Tree.

Arbutus unedo. STRAWBERRY TREE. South of Europe. 10 feet. Foliage dark green, peculiarly beautiful in the fall, when the tree is covered at once with blossoms and ripe fruit, which is edible; identical in appearance with strawberries.

ARCTOSTAPHYLOS. The Manzanita.

Arctostaphylos glauca. MANZANITA. 8 to 10 feet. Indigenous in the mountainous districts of this state; produces an abundance of white flowers in racemes, followed by red berries, maturing in Fall; wood is very hard, subject to a high polish and is valuable for canes. A fine large shrub for grouping.

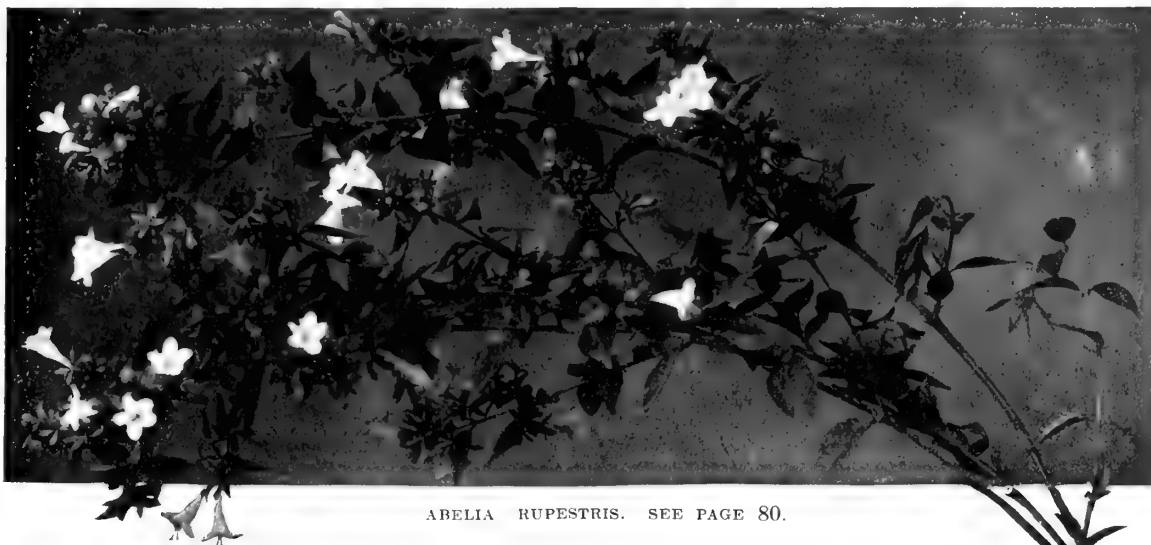
ARDISIA. The Ardisia.

Ardisia crenulata. (*A. crispa*). 2 to 3 feet. This very pretty handsome, dwarfish shrub with its dark shining green leaves, panicles of small white flowers, followed by drooping bunches of red berries, the size of peas, makes this plant very popular and particularly so at Christmas time. Can not be grown out of doors.

AUCUBA. The Gold Dust Plants.

Although not quite hardy in all sections of California, nevertheless they will thrive in localities subject to severe frosts if given some protection. Few plants are more desirable for grouping. With their large glossy leaves, followed by bright scarlet berries in the fall, they are very effective. They are fine house decorative plants and are well adapted to pot or tub culture.

Aucuba japonica. JAPANESE LAUREL. 4 feet. Himalaya to Japan. A very handsome shrub, and one of the best of the colored-leaved foliage plants; leaves large, distinctly speckled with golden-yellow; should be grown in partial shade.



ABELIA RUPESTRIS. SEE PAGE 80.

Aucuba japonica aurea maculata. GOLD-DUST LAUREL. A form with yellow spotted leaves. A very attractive plant and desirable for tub culture.

AZARA.

Azara microphylla. A graceful shrub with dark shining green leaves; flowers greenish yellow succeeded by orange colored berries. Very desirable as a single plant or for lawns. Does remarkably well in the interior.

BERBERIS. The Evergreen Barberries.

Berberis darwinii. DARWIN'S BARBERRY. A densely branched spreading shrub, with thick and leathery foliage; flowers orange yellow, very fragrant, followed by dark purple fruit; the best of the species. Attain a height of 2 to 4 feet.

B. ilicifolia. HOLLY-LEAVED BARBERRY. Especially prized for its low dense growth, brilliant red fruits, and its scarlet fall coloring.

B. newberti. NEWBERT'S MAHONIA. A pretty garden shrub, with spineless branches, and with spiny leaves; dark grayish green often tinged with purple.

BUXUS. The Boxwoods.

These very ornamental shrubs of dense but rather slow growth, with shining foliage are invaluable for grouping, lawn decoration and for hedge purposes. For tub culture and for formal decorative work they are more extensively grown than any other class of plants. They thrive in a warm dry climate fully as well as on the coast. The very hard and close grained wood is in demand for engraving and finer turnery work.

Buxus sempervirens. COMMON TREE BOX. Europe. 10 feet. Large shrubs of dense habit with small, deep green foliage. It is very desirable as a single specimen, for lawn decoration and grouping. It is often pruned into architectural shapes, planted in tubs and used for home decoration.

B. sempervirens argentea marginata. SILVER STRIPED-LEAVED BOX TREE. 6 feet. Of the same habit as the above, but with silvery-striped leaves.

B. sempervirens aurea. GOLDEN LEAVED BOX TREE. 6 feet. Has its leaves striped and variegated with golden color.

B. sempervirens suffruticosa. DWARF BOX. 3 feet. A fine small bush, with glossy, roundish leaves; the variety so extensively used for edging.

CAMELLIA. The Camellias.

Camellia japonica. Very beautiful winter flowering evergreens; their handsome, shining, dark green foliage

and magnificent, wax-like flowers of various colors which appear in great profusion all winter, render them indispensable for the conservatory, and well adapted for parlor or window culture; perfectly hardy in this climate, in the open ground, but should be planted in a shady place and protected the first year. Grow 6 to 8 feet high.

Camellia alba plena. DOUBLE WHITE CAMELLIA. A grand variety producing an abundance of very large, pure white, double flowers; stamens entirely enclosed by the petals.

C. Lady Campbell. DOUBLE RED CAMELLIA. Very double, flowers largest size, a beautiful shade of red.

C. Il Tramonto. DOUBLE PINK CAMELLIA. A beautiful shade of pink, blooms early and one of the best kinds for massing.

C. variegata. DOUBLE RED AND WHITE CAMELLIA. One of the best; flowers double red, striped white; very free flowering.

CARPENTERIA.

Carpenteria californica. 6 feet. An ornamental, tall growing shrub; a native of the Sierra Nevada mountains; flowers pure white, from three to four inches across, and very fragrant. A shrub which should have a place in every garden.

CASSIA. Wild Senna.

Cassia corymbosa. Argentina. 6 feet. An elegant evergreen shrub with glabrous branchlets and leaflets; flowers yellow, borne in terminal corymbs.

CEANOTHUS. New Jersey Tea.

Ceanothus azureus. Mexico. 10 feet. Of easy culture; flowers pale blue, appearing in April and May; leaves acutely serrated, bright green above and downy beneath.

C. hybridus gloire de versailles. HYBRID CEANOTHUS. 8 feet. A most desirable late flowering shrub with exceedingly large blue flowers. A valuable acquisition.

CESTRUM.

Cestrum aurantiacum. 4 feet. A free flowering evergreen shrub covered with orange-colored flowers during the entire summer.

CHOISYA. The Mexican Orange.

Choisya ternata. MEXICAN ORANGE. 4 feet. A pretty, low-growing shrub with glossy, bright green aromatically

scented leaves, producing an abundance of corymbs of snow white, sweet scented orange-like fragrant flowers. Blooms freely during the entire season.

CERASUS. The Evergreen Cherries.

A bush or small tree sometimes making a height of 20 feet. Very ornamental with shining, dark glossy green holly-like foliage, and found growing in the lower foothills throughout California. Flowers are produced in racemes and are followed by large red or black purple cherries, the stone almost filling them. A superb shrub and worthy of extensive cultivation.

Cerasus ilicifolia. HOLLY-LEAVED CHERRY. California. 20 feet. A very ornamental shrub or small tree, with brilliant foliage like the Holly, but of a lighter shade of green. Flowers in racemes followed by fruit which is very persistent, an inch in diameter, red or black-purple, the stone almost filling it. Makes a fine hedge and a beautiful lawn specimen tree.

C. ilicifolia integrifolia. BROAD-LEAVED. 15 feet. Very similar in habit to the preceding, but the leaves are very much larger with few spiny teeth; the racemes of flowers are more numerous and longer and the fruits are much larger. A very notable shrub on Santa Catalina Island.

COLLETIA.

Colletia cruciata. 4 feet. These extremely curious shrubs with their elliptic flattened, very prickly and spiny leaves should be planted by themselves to bring out their striking outlines. In the spring they are covered with small white flowers. Rare and odd hence worthy of considerable attention.

COPROSMA.

Coprosma baueriana picturata. 6 feet. A dense growing shrub, with bluntly rounded glossy green leaves. A fine decorative foliage plant and excellent either for lawn decoration or as a single specimen. Well adapted for borders, making a fine compact hedge.

C. baueriana variegata. 4 feet. A handsome compact shrub very similar to the preceding, with the exception of the leaves having a broad white marginal variegation.

CORONILLA. The Crown Vetches.

Coronilla emerus. SCORPION SENNA. Europe. 3 feet. A dense shapely shrub with compound leaves. Flowers large, showy, yellow tipped with red, expanding in late spring and early summer.

C. glauca. S. Europe. 4 feet. A pretty evergreen shrub, with glaucous green foliage and covered during the summer with yellow flowers; fragrant in the day time, but scentless at night.

C. glauca variegata. Identically the same habit as the preceding, except that the leaves are mottled with yellow.

COTONEASTER. The Cotoneasters.

Cotoneaster microphylla. Himalayas. 2 feet. Well adapted for rockeries on account of their low, almost horizontal growth. They will thrive in any ordinary garden soil. Flowers small, white, appearing in May and followed during the fall and winter months with bright red berries.

CRATAEGUS. The Evergreen Thorn.

Crataegus pyracantha. EVERGREEN THORN. BURNING BUSH. 10 feet. Europe and Asia. A thick, thorny, evergreen shrub; valuable either when grown single, or as a hedge; foliage small, of a rich, dark, bronzy, glossy green color; covered with white flowers, followed by masses of crimson berries, remaining on the plant all winter, making it very attractive.

DAPHNE.

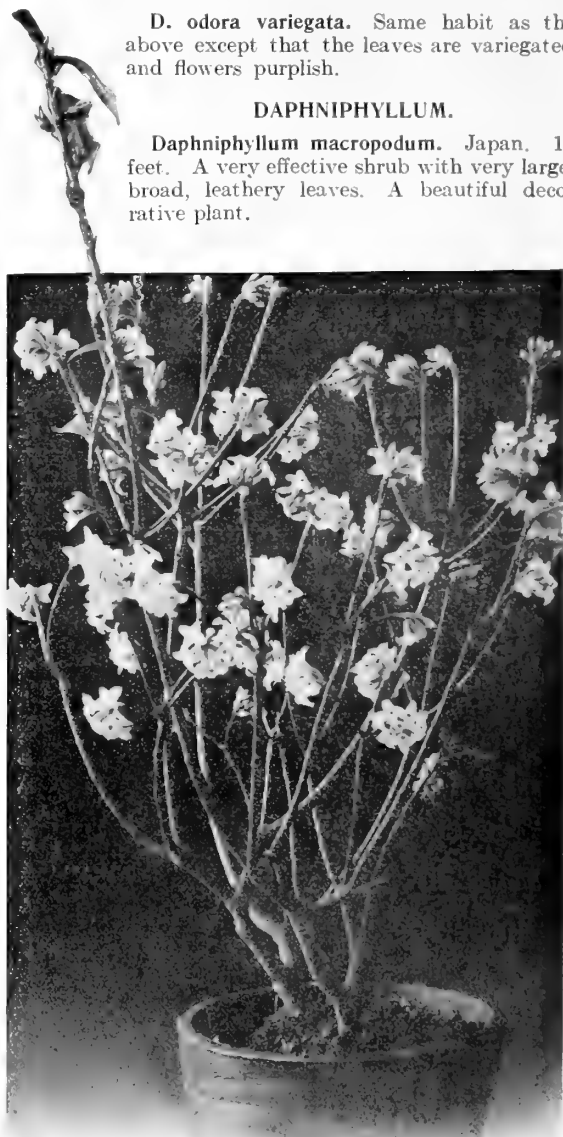
These beautiful shrubs are deserving of a place in every garden. Their deep, dark green lustrous foliage and showy, orange fragrant flowers, borne in great profusion when there are no other flowers, cause them to be in great demand. Grow 3 to 4 feet high.

Daphne odora. China and Japan. A low growing shrub, with dark, bright green foliage, and very fragrant white flowers appearing during the winter months.

D. odora variegata. Same habit as the above except that the leaves are variegated and flowers purplish.

DAPHNIPHYLLUM.

Daphniphyllum macropodum. Japan. 15 feet. A very effective shrub with very large, broad, leathery leaves. A beautiful decorative plant.



DAPHNE ODORA.

DATURA. The Angel Trumpet.

Datura arborea. ANGEL TRUMPET. 10 feet. A large shrub or small tree leaves 6 to 12 inches long and clothed with a powdery pubescence; flowers creamy white, large, 7 to 8 inches long, trumpet-shaped, with a musk-like odor. Blooms all summer.



CRATAEGUS PYRACANTHA. BURNING BUSH. SEE PAGE 82.

DEERINGIA.

Deeringia celesoides. 4 feet. A very pretty, graceful growing shrub, with light green foliage. Valuable for grouping.

D. celesoides variegata. A slender growing shrub, leaves margined white with long spikes of white flowers during the summer.

DENDROPANAX.

Dendropanax japonica. Japan. 4 feet. A very ornamental small tree, indigenous in the southern provinces of Japan. Leaves maple like. A very neat and attractive shrub.

DIOSMA. The Breath of Heaven.

Diosma ericoides. BREATH OF HEAVEN. Africa. 2 feet. A handsome little shrub, with heath-like foliage having an agreeable aromatic fragrance; flowers white, small, star-shaped, borne on the points of the twig branchlets. Very much used in floral work giving a very artistic and graceful effect to designs. Quite hardy.

DURANTA. The Golden Dew Drop.

Duranta plumieri. South America. 6 feet. An elegant shrub with pretty blue flowers, borne in great profusion in racemes on the ends of the branches during the entire summer.

ELAEAGNUS. The Evergreen Oleasters.

Highly ornamental shrubs with handsome foliage and for this reason very decorative either on a lawn or as single specimens. Will do well in any ordinary soil and thrive remarkably well in the interior valleys.

Elaeagnus reflexa. (*E. pungens*). BRONZE OLEASTER. Japan. Spreading shrub 8 to 10 feet with bronzy brown branchlets and large oblong undulated leaves, glossy green above and silvery beneath, with brown veins and interspersed with brown dots.

E. reflexa maculata. GOLDEN-LEAVED OLEASTER. 6 feet. Foliage beautifully blotched with golden yellow. Does remarkably well in the interior.

E. reflexa variegata. VARIEGATED OLEASTER. 8 feet. Another variety of the same habit as the two preceding except that the leaves are margined yellowish white.

ERICA. The Heath.

Dwarf shrubs with numerous short branches, densely clothed with small needle-like leaves. They are very

showy plants and produce a great variety of exquisite flowers from early spring until late in the fall.

Erica mediterranea. MEDITERRANEAN HEATH. 2 feet. A small, compact evergreen; with feathery foliage; and producing purplish-pink flowers in the Spring.

E. vagans alba. CORNISH HEATH. 1 foot. A charming plant, of dwarf habit and with white flowers.

ESCALLONIA.

These fine plants grow freely in almost any ordinary soil; they are well adapted as shelter plants for hedges. Introduced from South America. As foliage plants alone they are exceedingly attractive but add to this their very free flowering habit and they present a combination of qualities making them invaluable as all around purpose plants.

Escallonia montevidensis. (*E. floribunda*). 10 feet. An erect bush with cylindrical branches and rounded, dark glossy green leaves; flowers white in large terminal panicle like cymes appearing during the entire summer.

E. rosea. 6 feet. General habit same as the above, the flowers being light pink.

E. rubra. 4 feet. Branches erect and clothed with glandular hairs, and of rather dwarf habit; shining green leaves and bright red flowers.

EUGENIA. The Brush Berries.

Eugenia apiculata. Chili. 8 feet. An upright growing shrub with rounded, thick, dark, green leaves, producing an abundance of small fragrant myrtle-like flowers.

E. myrtifolia. (*E. australis*). BRUSH CHERRY. 6 feet. Commonly known as the double flowering myrtle. A neat little shrub with glossy leaves and crowned with an abundance of small double white flowers.

EUONYMUS. The Evergreen Euonymus.

A very interesting genus of evergreen shrubs; very desirable for hedges; stand pruning well; the variegated varieties are very effective when planted alone; are of very easy culture. Grow from 3 to 8 feet high.

Euonymus japonicus. EVERGREEN EUONYMUS. Japan. 6 to 8 feet. A handsome evergreen shrub of dense, upright habit, leaves dark lustrous green. A valuable plant for single specimens and for hedges. Can be trimmed in any way desired.

Euonymus japonicus albo-marginatus. SILVER MARGINED EUONYMUS. A very compact shrub, leaves with narrow white margins.

E. japonicus argenteo-variegatus. SILVER VARIEGATED EUONYMUS. A very choice, upright growing shrub, with silvery variegated foliage. A fine plant to enliven somber dark green shrubberies.

E. japonicus aurea. GOLDEN-LEAVED EUONYMUS. A shrub highly esteemed for its mottled, golden yellow foliage. Of fine rounded form; the leaves have the appearance of being varnished.

E. japonicus Duc d'Anjou. GOLDEN BLOTCHED EUONYMUS. Foliage light green, with outer edges of the leaves variegated with a broad band of golden yellow.

E. japonicus microphyllus. (*E. pulchellus*). SMALL LEAVED EUONYMUS. A dwarf growing variety; with small, deep, dark green leaves; very desirable for low hedges.

E. japonicus radicans argenteo-marginatus. VARIEGATED TRAILING EUONYMUS. A vigorous creeping variety with light, green silver-edged foliage. A very attractive vine, but not adapted to the warm interior valleys.

FABIANA.

Fabiana imbricata. South America. 3 feet. A very erect growing shrub with heath-like foliage and thriving in almost any soil. It is crowned in the summer with an abundance of white funnel-shaped flowers. Should have a place in every garden, as it is an extremely showy plant.

GARDENIA. The Cape Jasmine.

Gardenia jasminoides. (*G. florida*). CAPE JASMINE. 3 feet. A very pretty shrub, with thick, evergreen foliage and large double, waxy Camellia-like fragrant flowers, blooming from May to September.

GARRYA. The Quinine Bush.

Garrya elliptica. California to New Mexico. 8 feet. Leaves elliptical; dark green and shining above, hoary beneath; flowers orange-colored, arranged in elegant pendulous catkins from 6 to 9 inches long and proceeding from near the apex of the shoots followed by black berries; worthy of extensive cultivation.

GENISTA. The Brooms.

These very ornamental and free flowering shrubs will succeed almost in any soil or situation. The large pea-shaped flowers appear profusely in the spring and summer and are followed by small insignificant pods. They have erect stems and are apparently without leaves, the latter being rounded and an elongation of the stem.

Genista hispanica. SPANISH BROOM. 8 feet. An upright-growing shrub; flowers yellow, produced very freely in the spring on long, pendulous, round, leafless branches.

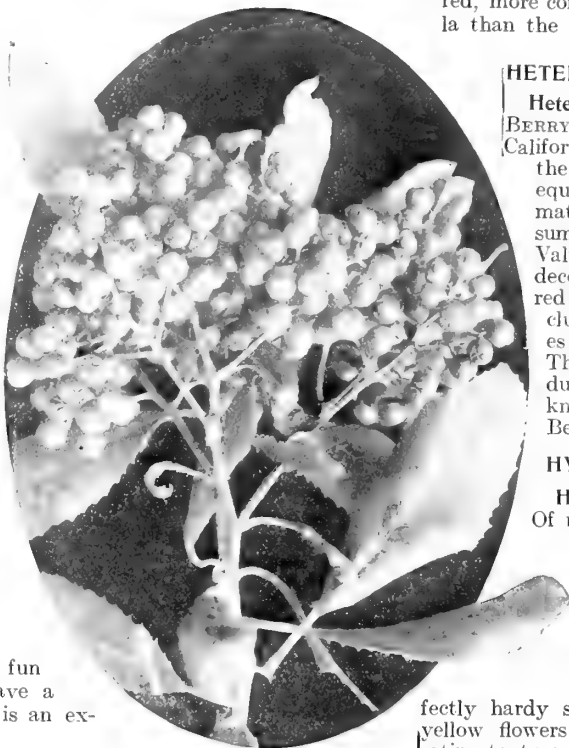
G. scoparius. SCOTCH BROOM. 8 feet. A very handsome shrub, with drooping branches; covered in the spring with bright yellow, pea-shaped flowers; very effective for grouping.

G. scoparius andreanus. 10 feet. This new Broom is a beautiful free bloomer, the flowers are of a rich golden yellow, with rich velvety purple crimson wings. A grand variety.

HABROTHAMNUS. The Coral Plants.

Habrothamnus elegans. Mexico. 4 feet. A strong growing shrub, bearing panicles of small trumpet-shaped, purplish-red flowers. Makes a grand effect on a lawn or trained against a wall or porch.

H. fasciculatum. 4 feet. Flowers of a deeper, purplish red, more compact and with a shorter corolla than the preceding.



HETEROMELES. The Christmas Berry.

Heteromeles arbutifolia. CHRISTMAS BERRY. 10 feet. A native shrub of California, growing quite abundantly in the coast counties and thriving equally as well in the hot, dry climate of the interior. In bloom in the summer, in numerous white panicles. Valued highly not only as a striking decorative plant but also for the deep red berries which hang in immense clusters on the ends of the branches from November to February. These berries are extensively used during the holidays and are known as Christmas Berries, Holly Berries, etc.

HYPERICUM. The Gold Flower.

Hypericum hircinum. 4 feet. Of rounded, compact habit, flowers larger than the following. Of a more upright growth. Species characterized by the strong, goat-like odor of the leaves. Of very easy cultivation.

H. moserianum. GOLD FLOWER. 2 to 3 feet. A perfectly hardy shrub, producing large, single, yellow flowers 2 inches across, of a peculiar satiny texture, in great profusion during the summer. The numerous nodding branches are densely furnished with dark green ovate leaves. Should be in every garden. Very effective in masses.

LAGUNARIA.

Lagunaria patersonii. Norfolk Island. 20 feet. A tall, pyramidal shrub. Leaves ovate, entirely covered with whitish scales beneath. Flowers like Hibiscus from white to pink. A charming plant and worthy of general cultivation.

LAURUS. The Laurels.

There are few foliage plants superior to the Laurel for inside or out of door decoration or ornamental purposes. They can be used advantageously as single specimens, for grouping and for embellishing the lawn and are very effective wherever planted.

Laurus cerasus. ENGLISH LAUREL. Southern Europe to Northern Persia. 10-15 feet. A fine, large evergreen; with broad, shining, green leaves; produces large panicles of creamy white flowers, followed by purple berries.

L. lusitanica. PORTUGAL LAUREL. 4 feet. A dwarfish shrub, with glossy, dark green leaves; flowers in large panicles, intensely fragrant at night.

L. nobilis. SWEET BAY. Mediterranean region. 40-60 feet. A very ornamental, upright-growing shrub, with deep, dark green, fragrant leaves, and covered in the fall with shiny black berries; if properly pruned, one of the handsomest of decorative plants. They are used for deco-

Laurus Continued.

ration in restaurants, hotel lobbies and in many other places where a striking decorative plant is required. They are trained into pyramids, cones, globes, and many other fantastic shapes. They will stand all kinds of abuse and neglect, and this is another reason for their popularity.

LEPTOSPERMUM.

Leptospermum laevigatum. Australia. 20 feet. A tall gracefully arching shrub; foliage grayish green; flowers white in the greatest profusion. A fine shrub to secure rapid effects; not very particular as to location. Used very extensively in the pioneer work in Golden Gate Park.

LIGUSTRUM. The Evergreen Privets.

Ornamental shrubs or small trees with shining green leaves and small whitish flowers in terminal panicles, followed in the fall by black round berries remaining on the plant all winter. They adapt themselves to almost any situation, doing as well in the shade as in the sun. They are valuable for hedges, single specimens and for grouping.

Ligustrum japonicum. JAPANESE PRIVET. 12 to 15 feet. A very large shrub of symmetrical outline, with glossy, dark green, leathery leaves; flowers white, borne in clusters; followed by purplish-blue berries; a very desirable tall hedge plant; stands trimming well.

L. japonicum variegatum. JAPANESE VARIEGATED PRIVET. 15 feet. Of more compact growth than the preceding; leaves margined and are blotched creamy white; very effective for grouping.

L. lucidum. SHINING PRIVET. 20 feet. Leaves ovate lanceolate, or nearly rotundate, leathery thick, bright green. Of rapid growth and spreading habit. Young leaves greenish yellow.

L. sinense. CHINESE PRIVET. China. 10 feet. A shrub with slender, spreading branches and ovate lanceolate leaves, shining dark green above and light green beneath. It produces bluish-black berries, covered with bloom in great profusion, presenting a very attractive appearance.

MAHONIA. The Evergreen Mahonias.

Mahonia aquifolium. OREGON GRAPE OR MAHONIA. 4 feet. A native variety with shining, purplish, prickly leaves; bright yellow flowers, berries blue or nearly black. A handsome compact growing shrub becoming very effective within a few years. Extensively planted in woodlands as an excellent covert plant.

M. japonica. JAPANESE MAHONIA. 3 feet. Very distinct species with unbranched stems and leaves about one foot long; the bright yellow flowers are produced in terminal clusters of long racemes. Must be planted in a shady situation in hot, dry climates.

MELALEUCA. The Bottle Brushes.

These low spreading shrubs with their graceful drooping branches and bottle shaped flowers, not only are very effective for grouping on account of the rapidity with which they cover the ground but are also adapted to

planting in the poorest of soils as they will stand drought, sea-winds and alkali.

Melaleuca decussata. 20 feet. An Australian shrub, with glabrous foliage and covered with spikes of lilac colored flowers in August.

M. ericifolia. 8 feet. Flowers pale yellow, leaves leather like, spreading or somewhat recurved.

M. leucadendron. CAJUPUT TREE. 15 feet. Flowers white in pendulous spikes, leaves alternate, long, lanceolate. A fine shrub or small tree. It is said that a volatile oil is obtained from the leaves and that the Australian aborigines use the bark for tinder, shields, canoes and for covering huts.



HYPERICUM MOSERIANUM. GOLD FLOWER.

SEE PAGE 84.

MELIANTHUS.

Melanthus major. South Africa. 10 feet. A very ornamental plant and largely employed in sub-tropical gardening. It has very picturesque foliage, leaves grayish green, over a foot long and deeply lobed. Flowers reddish brown in long spikes.

METROSIDEROS. The Bottle Brush.

Metrosideros robusta. BOTTLE BRUSH. 6 feet. A very interesting and quaint shrub with narrow leaves and covered with rich, crimson flowers, in dense racemes in July.

M. semperflorens. 10 feet. A handsome shrub with thick, lanceolate leaves, reddish when young; spikes of reddish flowers rather loose. A more rapid grower than the preceding.

MYOPORUM.

Myoporum laetum. New Zealand. 20 feet. For quick and picturesque effects, doing well in any soil, hardly any shrub will rival these with their glossy leaves, whitish bell-shaped flowers, and lilac-colored berries. They do well in the vicinity of the ocean.

MYRTUS. The Myrtles.

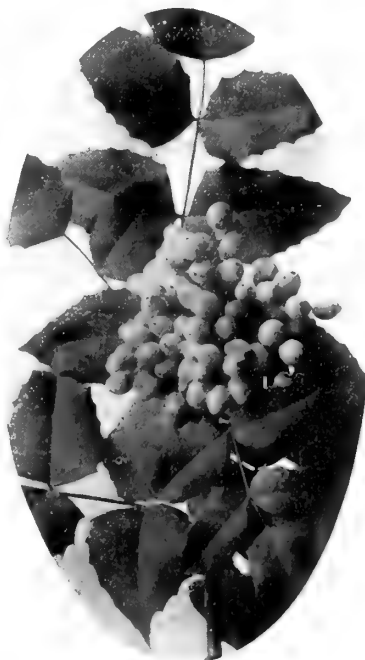
This classic shrub with its handsome aromatic foliage and its fragrant white blossoms which appear all summer, is not only very effective to put the finishing touch to a group of larger shrubs, but it also makes a very pretty pot plant for porch decoration.

Myrtus communis. TRUE MYRTLE. Europe. 10 feet. A dwarf shrub, with lustrous, green leaves and fragrant white flowers; a very effective shrub in the interior valleys.

M. communis microphylla. SMALL-LEAVED MYRTLE. 6 feet. A variety with small, dark green foliage set closely along the branches. A fine ornamental shrub, excellent for grouping.

NANDINA.

Nandina domestica. JAPANESE NANDINA. 4 to 6 feet. A beautiful upright growing dwarfish shrub with a number of reed like stems springing from the same root, and about as thick as a finger and crowned with deep, glossy green leaves and with tall spikes of white flowers. The young growth is prettily tinged with red



MAHONIA AQUIFOLIUM OREGON GRAPE.

Nandina Continued.

and in the winter assumes beautiful coppery tones. In the fall it is covered with masses of small red and white berries. This elegant, graceful plant does well on the coast and interior and should adorn every garden large or small.

NERIUM. The Oleanders.

We are making the growing of these beautiful plants a specialty, and have selected the following fine varieties as the best in our collection of over fifty sorts imported direct by us from the principal nurseries of Europe. Oleanders are particularly adapted to this climate and are deserving of more cultivation than has been given to them; their large, deep green foliage, combined with their fragrant flowers of many hues, which appear all summer, render them our most attractive and effective ornamental plants.

Album plenum. The most perfect white oleander, flowers very double, trusses large. Flowers very freely.

Atropurpureum duplex. One of the finest double oleanders; color deep carmine streaked with pure white; very fine and effective.

Laurifolium. Especially remarkable on account of its stiff, broad foliage like that of a laurel; flowers rosy pink, streaked white.

Madame Peyre. Very double, triple corolla; changeable from pure ivory to bright straw color; throat deeper yellow; very fine and desirable.

Madame Planchon. Flowers rosy lilac, semi-double; trusses very large and thickly set. Color fine, one of the best.

Madoni grandiflorum. A grand variety, flowers large, white, semi-double, measuring 2½ inches across; throat creamy white; a strong grower and very floriferous; trusses large; very fragrant.

Madame Sarah Bernhardt. This is a most magnificent single oleander; one of the very best; flower truss very large and full; flowers of a delicate white inclining to pink, center streaked with light crimson.

Monsieur Balaquier. A strong grower with immense trusses of single, soft rose flowers, two inches across, corolla streaked with white. A good sort.

Mrs. F. Roeding. This magnificent double oleander, originated by us, is a chance seedling out of several thousand raised from the imported varieties; if properly pruned to one stem, the branches form a fine, compact, dense head, covered in summer with trusses of beautiful double pink flowers, (the color of the La France rose) delightfully fragrant, with fringed petals, which completely envelope the plant. More hardy than any other variety and is in every respect a very superior oleander; worthy of a place in every garden.

Nankin. One of the very best; bush rather dwarf in habit; flower truss large, single; upright; flowers light salmon yellow; throat deep yellow, streaked orange and crimson; especially fine in fall.

Nankin variegated. Leaves beautifully variegated and grained yellowish-white; very fine in the shade; flowers double, light pink.

Pierre Roudier. Very double; cerise pink, flushed and edged bright rose; an early floriferous bloomer. A superb variety.

Professor Durand. Semi-double, two corollas; color changing from creamy yellow to deep amber yellow; throat always deep amber yellow. A very free bloomer.

Purpureum. Single. Very fine, deep carmine crimson, shaded and streaked deep maroon.

Sister Agnes. Very large trusses; single; flowers pearly white, very fine and desirable. Very floriferous.

Splendens giganteum. One of the most double and the largest of all oleanders, flowers measuring 3 inches across, light pink with occasional blotches of white; stamens entirely hidden in a whorl of petals which are delicately fringed. Very fragrant; a grand sort, blooming from early summer until late in the fall.

OLEA. The Japan Fragrant Olive.

Olea fragrans. (*Osmanthus fragrans*). JAPAN YELLOW FRAGRANT OLIVE. 20 feet. A small tree with sweet, fragrant, golden colored flowers, sufficient to make the whole garden attractive on account of the strong perfume. Blooming continually during the winter months.

PHOTINIA. The Evergreen Photinia.

Photinia serrulata. EVERGREEN PHOTINIA. China, 12 feet. A handsome shrub with glossy, green leaves, assuming the most beautiful tints and shades in the winter; flowers small, white, in large terminal flat corymbs, followed by a wealth of bright red berries.

PITTOSPORUM. The Japanese Pittosporums.

Very bright foliated plants either growing compact with spreading branches or with an erect upright habit. They are all very ornamental and their attractive colors combined with the fact that some of them are very free flowering, causes them to be in demand for grouping, hedges and for lawn ornamentation.

Pittosporum crassifolium. THICK-LEAVED PITTOSPORUM. 10 feet. Useful for ornamental planting on account of its pale glaucous foliage; will grow under the most unfavorable conditions. Is very valuable for wind-breaks along the coast, withstanding the severest gales.

P. eugenoides. 20 feet. A very handsome, upright-growing shrub; with silvery light green leaves, and black stems; a good hedge plant and very ornamental as an individual.

P. tobira. JAPANESE PITTOSPORUM. 4 feet. A low growing shrub, with dark green leaves; flowers pure, white, fragrant, in terminal umbels.

P. tobira variegatum. VARIEGATED JAPANESE PITTOSPORUM. 4 feet. Same habit as above, but foliage is margined with white. Very largely used in the Eastern States as a house plant.

P. undulatum. WAVY-LEAVED PITTOSPORUM. 10 feet. A shrub or tree with lance-shaped, deep green, glossy leaves, flowers intensely fragrant at night.

POLYGALA.

Polygala dalmaisiana. 4 feet. A very free-blooming plant with rosy pea-shaped flowers, completely enveloping it during the entire summer. The odd color and shape of the flowers and its free blooming, make it very attractive. It will stand considerable frost.

RAPHIOLEPIS.

Raphiolepis ovata. Japan. 10 feet. A beautiful compact-growing shrub, with dark, shining green leaves, and covered in summer with white flowers, followed by black berries. A fine shrub in warm, dry climates.



MYRTUS. THE MYRTLE.
SEE PAGE 85.

RHAMNUS.

Rhamnus alaternus. Europe. 20 feet. A very hardy shrub, with oval-elliptic, smooth shining green leaves and small greenish flowers, disposed on short racemes.

R. alaternus variegata. Same as the above except that the leaves are variegated silvery white.

ROSMARINUS. The Rosemary.

Rosmarinus officinalis. ROSEMARY. 3 feet. A well-known hardy shrub grown in small quantities in every garden. The foliage is often used for decocting tea for relieving headaches.

TEUCRIUM.

Teucrium canadense. Very useful for low grounds and moist borders; leaves lanceolate, sharp-serrate; flowers purple to cream-color, the corolla about $\frac{1}{2}$ inch long.

VERONICA.

All are very showy, free blooming plants and succeed in any good garden soil in a sunny situation. All varieties seem to do very well in California and they are particularly well fitted for grouping and massing for immediate effect.

Veronica andersonii variegata. One of the best evergreen flowering shrubs; flowers violet blue; leaves glossy green, margined silvery white.

V. imperialis. One of the best of the species; has large, dense spikes of amaranth red or crimson purple flowers.

VIBURNUM. The Laurustinus.

Very handsome winter flowering shrubs; deserving to be universally planted.

Viburnum tinus. (*Laurustinus*). Mediterranean region, 8 to 12 feet. A well-known winter flowering shrub of great beauty; producing an abundance of white flowers; well adapted for hedges.

V. tinus grandiflorus. Leaves and cymes of white flowers much larger than the preceding. A beautiful variety.

V. tinus rotundifolia. Far superior to the common variety; leaves rounded, deep glossy green; flowers much larger than the above; adapted to this valley; never sunscalds.

V. tinus variegatum. VARIEGATED LAURUSTINUS. Leaves beautifully blotched with silvery white; very fine.

CLIMBING AND TRAILING PLANTS.**AKEBIA. The Akebias.**

Graceful hardy climbers with twining stems. Very desirable, do well in exposed situations.

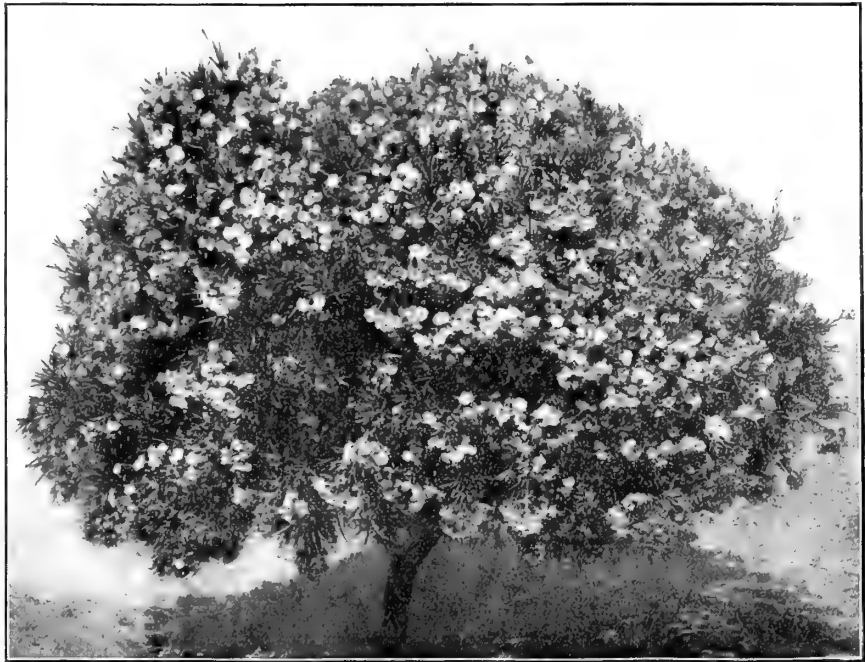
Akebia lobata. Recently introduced from Japan, having three leaves on one stalk instead of five; flowers are purple and appear in the early spring followed in the fall by showy purple fruit.

A. quinata. Japan. FIVE-LEAVED AKEBIA. One of the most graceful and hardiest of climbers, with deep green, small foliage, and numberless branches of violet

brown flowers, having a most pleasant cinnamon odor. Fine for positions where dense shade is required. Fruit very showy, 3 to 5 inches long, dark purple.

AMPELOPSIS. The Deciduous Creepers.

These extremely popular vines have never lost their attraction for they are seen in all parts of California. They are used for covering stone walls, chimneys, the fronts of houses. They add to the exterior of any building wherever they are planted and they are sure to maintain their popularity.



NERIUM. MRS. F. ROEDING, OLEANDER. SEE PAGE 86.

Ampelopsis quinquefolia. VIRGINIA CREEPER. The common American Ivy, with large, luxuriant foliage, which in autumn assumes the most gorgeous and magnificent color before dropping off; one of the finest vines, for covering walls or verandas.

A. quinquefolia engelmanni. A new variety with shorter joints than the preceding and a more rapid grower.

A. veitchii. BOSTON IVY. JAPAN IVY. China and Japan. This is the handsome creeper so generally used for covering brick, stone and wooden walls; when once established the vine grows very rapidly and clings to the walls with the greatest tenacity; the leaves are of a shining, glossy green, taking on beautiful, autumnal coloring; flowers small, followed by dense clusters of deep blue berries.

ARISTOLOCHIA. The Dutchman's Pipe.

Aristolochia macrophylla. (*A. Siphon*). DUTCHMAN'S PIPE. A very rapid and dense climber, with large heart-shaped leaves, retaining their color from early spring until late in the fall when they drop off. Curious pipe-shaped yellowish-brown flowers.

BIGNONIA. The Trumpet Flowers.

Among the climbing vines, these beautiful plants are deserving of far more attention than they have ever received. Their flowers are large, showy, of the most delicate shades and colors. For covering walls, rocks, trellis-work, or for climbing trees they have few equals. Some

Bignonia Continued.

varieties are very hardy while others will only thrive in localities where biting frosts do not occur.

Bignonia grandiflora. THE TRUMPET VINE. China and Japan. A strong climber with large, orange-scarlet flowers; very showy when in full bloom; a beautiful object when trained to a stake and made to assume the form of a standard shrub or tree. Loses its leaves in winter.

B. magnifica. A good evergreen climber, covered in summer with panicles of large flowers varying from delicate mauve to rich, purplish-crimson, throat light primrose.

B. tweediana. A very strong grower with rather small leaves and of a very clinging habit. Verv useful for covering walls, pillars, etc. When in bloom in the late spring it is very pretty with its pendant, canary yellow, trumpet-shaped blossoms.

B. venusta. A vigorous grower, producing large, deep, orange-colored flowers. A magnificent evergreen vine for covering old stumps and trunks of trees. Should not be planted in very frosty locations.

BOUGAINVILLEA.

A very showy class of climbers and regarded as among the finest in cultivation. They are attracting widespread attention at the present time, and although regarded as being adapted only for greenhouse culture, they are doing splendidly in many of the coast counties; will do well in the interior if afforded some protection in the winter. In many localities in Southern California they grow to perfection. They have peculiarly formed flowers resembling the leaves in shape and produced at the ends of the branches in wonderful profusion.

Bougainvillea glabra sanderiana. A beautiful evergreen climber, producing deep, rosy flowers in great abundance. Where frosts occur it must be protected.

B. spectabilis lateritia. Flowers larger than the above and of a brick-red color. A very rare and desirable climber. Has been in great demand in recent years. In favorable locations it is one of the grandest of climbers

CLEMATIS. The Clematis Vines.

Clematis are vigorous growing deciduous climbers and are used in many places to cover walls, fences, balconies and small buildings. They do best in a light loamy soil, which must be well drained which should receive annual applications in winter of horse or cow manure. In warm dry climates the spraying of the foliage is very essential mornings and evenings. In moist, cool climates they are rampant growers and there are but few climbing plants which excel them in gracefulness or daintiness of appearance.

Clematis flammula. SWEET CLEMATIS. A slender, but vigorous climber, prized for the fragrance of its small white flowers which literally cover the plant in the summer and fall months. The only variety which thrives well without any particular care in the interior.

Clematis montana. MOUNTAIN CLEMATIS. An ideal variety for California. The flowers are produced in spring in great profusion. They are about the size of a dollar, white with a dash of pink and very sweet scented.

C. paniculata. JAPANESE CLEMATIS. A very hardy climber introduced from Japan, with fragrant small, white flowers, in clusters, completely covering the upper portion of the vine in late summer and early autumn. Does well in a sunny situation. Will stand severe pruning in the winter.

C. hybrida. THE LARGE-FLOWERING CLEMATIS. The following embrace the best of the named varieties of Clematis. The magnificent large flowers are freely produced in summer and are very much prized on account of their rich coloring and delicate shades. Careful attention must be given to watering during the summer months as they are very susceptible to injury by drought.

Duchess of Edinburgh. The best double white, strongly imbricated.

Jackmanii. Large intense violet purple very free flowering. One of the most popular varieties.

Madam Edouard Andre. RED JACKMANII. A beautiful variety with large flowers of a deep rich crimson color.

CLIANTHUS. The Parrot's Bill.

Clanthus puniceus. PARROT'S BILL. New Zealand. A beautiful evergreen vine, with clusters of brilliant, crimson flowers shaped like a parrot's bill. Blooms all winter in the coast counties.

COBOEA.

Coboea scandens. Mexico. A beautiful evergreen climber of rapid growth, bearing large purple bell-shaped flowers in great profusion during the entire season; very



WISTARIA CHINESES ALBA. SEE PAGE 88.

attractive and desirable for arbors and trellises. Should not be planted in exposed situations.

C. scandens alba. Identical with the preceding with the exception that the flowers are white.

DECUMARIA. The Climbing Hydrangea.

Decumaria barbara. AMERICAN CLIMBING HYDRANGEA. A showy vine climbing by aerial rootlets. Thrives in any good loamy soil and is well adapted for covering walls, rocks, trunks of trees. Flowers white, fragrant, freely produced in large terminal corymbs.

DOLICHOS. The Australia Pea Vine.

Dolichos lignosus. India. Commonly known as the Australian Pea Vine. A rampant grower and produces an immense number of pretty pea-shaped rosy purple flowers. Evergreen. Deserving to be more generally planted.

Dolichos lignosus albus. A pure white variety of the above. It is a fine vine for covering fences, outbuildings, etc. Its flowers are very delicately scented.

FICUS. The Climbing Fig.

Ficus repens. CLIMBING FIG. China and Japan. A very handsome little evergreen climber; with small, roundish, dark green leaves. Hardy in this State; an attractive plant, attaching itself to walls, etc., like ivy.

HEDERA. The Ivy Vines.

The Ivy is a very valuable plant for covering walls, trunks of trees, for screens, covering walls of cool green-houses and for hanging baskets. It makes a handsome evergreen carpet under trees and may be used to advantage for borders of shrubberies. Its flowers are inconspicuous but there are but few evergreen, climbing foliage plants that will thrive under as many uncongenial conditions as it will.

Hedera helix. ENGLISH IVY. A very fine variety, with large, thick, shining leathery leaves.

H. helix canariensis. GIANT OR LARGE-LEAVED IVY. Large, roundish, ovate, entire or slightly three lobed leaves; bright, yellowish green, sometimes 8 inches broad.

H. helix variegata. VARIEGATED IVY. This is one of numerous forms of the "Common English Ivy" with bright green leaves margined and blotched with creamy white or yellow.

HEDYSARUM.

Hedysarum multijugum. A very showy and straggling climber and worthy of general cultivation; flowers violet or purplish magenta, with yellow blotches in racemes 8 to 18 inches long appearing all summer. Very fine for rock-work.

JASMINUM. The Jasmines.

These are very interesting plants, some of them growing in the form of shrubs, while others are either climbers or trailing plants. Very graceful, and their mass of showy flowers, which in some varieties push out the full length of the stems, makes them very attractive.

Jasminum gracillimum. Borneo. A new evergreen Jasmine, remarkable for its freedom of bloom and beautiful pure white flowers, borne in clusters; very fragrant.

J. Grand Duke. Large, double white, imbricated, fragrant flowers. More of a shrub than a climber.

J. grandiflorum. CATALONIAN JASMINE. Flowers pure white, star-shaped; of exquisite fragrance and produced in the greatest profusion all the year round. Plant is of a shrubby, half-climbing habit, with very delicate evergreen foliage.

J. nudiflorum. NAKED FLOWERED JASMINE. China. 3 to 5 feet. A graceful shrub with drooping branches, leaves consisting of three leaflets, dark green. Flowers bright yellow, appearing in great profusion before the foliage, and heralding spring even before its time in some seasons.

J. nudiflorum primulium. In this new variety introduced from China, we have almost the counterpart of the preceding except that the flowers are fully double the size.

J. officinale. TRUE JASMINE OR JESSAMINE. Native of Persia and India. This is the classic species and the Jessamine of literature. Flowers white, deliciously fragrant, and produced in clusters.

J. revolutum. ITALIAN YELLOW JASMINE. Asia. A vigorous variety; can be grown as a vine or shrub; covered with rich, yellow flowers all summer.

KENNEDYA.

These are very fast growing plants and are well adapted for training on trellises. They should be given plenty of

water in the spring and summer, but require very little in the winter when the plants are at rest.

Kennedya rosea. Large, light green foliage, with race-mes of pea-shaped, rose-colored flowers during February and March.

K. rubicunda. Similar in habit to the preceding; flowers dull, dark red.

LANTANA.

Lantana sellegiana. WEEPING OR TRAILING LANTANA. A pretty trailing variety suitable for vases, hanging baskets; flowers delicate rosy-lavender and produced very freely.

LONICERA. The Honeysuckles.

Lonicera flava. YELLOW CORAL HONEYSUCKLE. A well known variety introduced from the Southern States; flowers pale yellow, corolla pale yellow, marked purplish outside. Very handsome in fall with abundant scarlet berries.

L. japonica. (*L. halleana*). JAPANESE HONEYSUCKLE. A rampant evergreen climber, with dark green, ovate leaves. Flowers white, changing to yellow, deliciously fragrant, borne in great profusion during the entire summer. One of the best for covering ground and trellises.

L. japonica aurea reticulata. VARIEGATED LEAVED HONEYSUCKLE. Japan. Flowers yellow, very fragrant; leaves are beautifully netted and veined with clear yellow; evergreen.

L. periclymenum. WOODBINE. Europe. A low rapid climber with dark green leaves, fading in autumn with beautiful tones of yellow and purple. Flowers yellowish, white within, red outside, very fragrant.

L. semperflorens. RED CORAL HONEYSUCKLE. A strong, rapid grower; blooms all summer; flowers scarlet.

L. standishii. CHINESE HONEYSUCKLE. A well-known variety, with dark half evergreen foliage; veins of purplish hue beneath; remains green all winter; flowers white and pink, fragrant.

MANDEVILLA. The Chili Jasmine.

Mandevilla suaveolens. CHILI JASMINE. S. America. Fine summer climber, with great clusters of large waxy, star-shaped blossoms, exquisitely fragrant. Should be planted in a somewhat protected situation as it will not stand very much frost.

MANETTIA.

Manettia bicolor. Brazil. A rapid and beautiful new climber; flowers an inch in length, of the most intense scarlet color, tipped with bright golden-yellow; blooms through the fall and winter months.

MUEHLENBECKIA. The Wire Vine.

Muehlenbeckia complexa. Apparently a most delicate and tender plant, but on the contrary it has demonstrated that it will do equally as well on the coast as it does in the interior. It is a very rapid and showy climber, invaluable for covering walls, wire netting fences and for rock-work. Its graceful, spray-like branches, its small thick waxy-white flowers followed by transparent, glistening, icicle-like fruits in the fall, make it one of the best of our evergreen climbers.

MYRSIPHYLLUM. The Smilax.

Myrsiphyllum asparagoides. SMILAX. This is the well known vine so universally used for wreaths, bouquets, festoons and table decoration. It is of very easy culture, all it requires is a little shade, fair soil and a string or small wire to train on.

M. asparagoides myrtifolia. MYRTLE LEAVED SMILAX. Fully as strong a grower as the preceding, with smaller myrtle like leaves. A very striking plant.

PASSIFLORA. The Passion Vines.

The Passion Vines are all strong growing evergreen climbers with large, yellowish green leaves and brilliantly colored flowers, some varieties maturing their fruits when grown out of doors and adding to the brilliancy of the plant. They are of exceedingly rapid growth and are well adapted for growing on old tree-stumps, covering walls or buildings. They always excite admiration when in bloom.

Passiflora caerulea. Flowers faintly scented, purple at the bottom, white in the middle, blue at the ends; fruit yellowish. One of the hardiest and grows well in the interior and the coast; does not seem to be affected by either heat or cold.

P. caerulea Constance Elliott. Pure white with a slight coloring at the base of the petals. Very hardy.

P. edulis. Brazil. A very rapid-growing plant, with beautiful, glossy green foliage; flowers white, with blue or violet base; fruit edible, as large as a goose egg.

P. ignea. One of the best, flowers intense crimson, 4 inches in diameter and hanging gracefully from the pendulous branches.

P. violacea. Flowers 3 inches in expanse; petals a pale lilac, blue in the middle and white at the base.

P. vitifolia. PINK FLOWERING. A very rampant grower with clear pink flowers which appear during the summer and fall months in great profusion.

PERIPLOCA. The Silk Vine.

Periploca graeca. SILK VINE. An exceedingly rapid-growing deciduous vine, reaching up to a great height, with shining dark green and glossy leaves of broadly lanceolate outline and umbels of purplish-brown flowers. A great climber in warm, dry climates.

PHASEOLUS. The Snail Vine.

Phaseolus caracalla. SNAIL VINE. CORKSCREW-FLOWER. A very unique climber requiring some protection in the winter; with fragrant and peculiarly twisted flowers varying from purple to yellow and having a twisted shape like a snail, hence the name.

PLUMBAGO. The Leadwort.

Plumbago capensis. Can be trained as a bush or climber; flowers light sky-blue, produced through the entire summer; stands drought, water and brightest sunshine.

P. capensis alba. Pure white, form of the above.

PUERARIA. The Kudzu Vine.

Pueraria thunbergiana. (*Dolichos japonicus*). KUDZU VINE. An immensely vigorous vine, producing stems 60 feet long in a single season. Like the Jack-and-the-Bean Stalk of magic fame, this wondrous vine with ordinary treatment will turn everything it covers with leafy loveliness. Flowers purple, fragrant, pea-shaped. Dies in winter, sprouting again in the spring except in frostless localities where it is perennial.

SOLANUM. The Potato Vines.

Solanum jasminoides. POTATO VINE. S. America. A very rapid-growing vine, with dark green leaves; flowers white with yellow centers.

S. wendlandii. Costa Rica. A magnificent, rapid-growing vine, with large dark glossy green leaves; flowers large, lilac-blue, borne in cymes six inches and more across; flowers profusely, and is very showy. Requires some protection in the winter in exposed situations. Does remarkably well in southern California and is one of the attractions there.

SOLLYA. The Bluebell.

Sollya heterophylla. AUSTRALIAN BLUEBELL CREEPER. A great favorite and much cultivated on account of the brilliant blue of its tubular flowers. Especially valuable for covering banks, rockwork and low fences. A fine hardy evergreen climber.

SWAINSONIA.

Swainsonia galegifolia albiflora. Australia. A very graceful climber and desirable for trellises; flowers pure white, resembling Sweet Peas in form, produced in pure white sprays in the greatest profusion.

S. galegifolia rosea. Same habit as the former, but has pink flowers.

TECOMA. The Trumpet Vines.

All beautiful and very showy evergreen climbers and with a little care and an occasional application of manure, will more than repay in their appearance the care bestowed on them.

Tecoma jasminoides. AUSTRALIAN BOWER PLANT. A beautiful climber, with bright glossy green leaves; flowers white, shaded at the throat to a deep purple.

T. jasminoides alba. Very scarce. The same as the preceding except that the flowers are of the purest white.

T. mackenii. One of the best of this beautiful group of climbers, with dark green, glossy leaves and funnel formed flowers, light pink, striped red.

T. radicans. TRUMPET CREEPER. United States. Similar to *Bignonia grandiflora*, but is an evergreen; flowers a beautiful shade of scarlet red; desirable for covering the trunks of trees or unsightly buildings.

WISTARIA.

Wistaria. One of the most graceful of climbers; a quick, rapid, vigorous grower; it is surpassed by no plant for covering walls or piazzas, and this, combined with its rich, pendulous panicles of pea-shaped flowers appearing in the spring in great profusion, renders this one of the most desirable of deciduous climbing plants.

Wistaria chinensis. CHINESE WISTARIA. One of the most elegant and rapid growing vines. Leaves compound, consisting of about eleven pale green leaflets; flowers pea-shaped, produced in pendulous clusters one foot long in very early spring and summer.

W. chinensis alba. CHINESE WHITE WISTARIA. A very choice variety; a vigorous grower, with long racemes of pure white flowers.

W. chinensis flore-pleno. DOUBLE FLOWERED WISTARIA. A rare variety, with long clusters of double, pale blue flowers. Not as free a bloomer as the Chinese Wistaria.

W. magnifica. AMERICAN WISTARIA. United States. A slender growing vine with dark green foliage. Flowers pale lilac with a yellow spot, in short dense racemes. Bloom later than Chinese Wistaria.

W. multijuga alba. LOOSE CLUSTERED WISTARIA. Bears long, loose racemes of pure white flowers. Flowers smaller but the racemes are from 2 to 3 feet long. Very fragrant.

W. multijuga. PINK FLOWERING. In habit practically the same as the preceding, except that the flowers are of a delicate pink color.



THE PALMS.

IT was Linnaeus, the great Swedish botanist, who always spoke of the palms as the "Kings and Princesses of the Vegetable Kingdom," an appellation fully warranted by their erect carriage and noble appearance. They certainly are the most highly ornamental of all plant life, and it is upon them chiefly that we depend for that distinctive tropical appearance of our gardens which is the admiration of all tourists from less favored climes.

The soil and climate of nearly the whole of California is peculiarly adapted to their successful culture, and after being once established, they require but little care to keep them in first-class condition.

There are species so hardy that they endure, without injury, the frosts and snows of the southern part of both England and Ireland.

Here, where they grow so luxuriantly, we should make them the most prominent feature of our landscapes, and no California garden, however small, is complete without one or more members of this strikingly handsome family; plants whose beauty constantly increases with age.

We are making a specialty of the growing of these beautiful, graceful plants and our collection is very complete.

All marked with an asterisk are for indoor and conservatory decoration, or for frostless locations.

ARECA.

**Areca lutescens*. Madagascar, 30 feet. One of the most graceful and beautiful palms in cultivation; the foliage is of a bright glossy green, with rich, golden stems; adapted only to greenhouse or house culture.

CHAMAEROPS.

Chamaerops excelsa. (*Trachycarpus excelsus*). WIND-MILL PALM. CHINESE PALM. China, Japan, India, 30 feet. Leaves fan-shaped, deeply cut. This is the hardiest palm we have, and, although it is not such a rapid grower as some, it is worthy of extensive cultivation, as it is very ornamental, a symmetrical grower, and has very handsome palmate leaves.

C. fortunei. 20 feet. Similar in appearance to the preceding, but having larger and broader leaves, cut half way or more down; segments pendulous towards the tips.

C. nepalensis. 20 feet. Resembles *Excelsa* in habit, but more dwarf in growth; the leaves are smaller, stiff, more rounded; and the leaf-stalk shorter and stouter; the leaves are of a deep, dark green color; a rare and handsome, hardy palm, worthy of a place in every garden.

C. humilis. The Mediterranean region. 20 feet. A dwarf-growing Fan Palm, with divided, fan-shaped, leaves; stems thorny; one of the hardiest, and of easy culture; a fine lawn plant, especially for small places.

COCOS. The Coconut Palms.

Cocos australis. PINDO PALM. Paraguay. 15 feet. A slow-growing decidedly ornamental, very graceful and very hardy palm; leaves pinnate; glaucous green; stem very much recurved; suitable for small gardens or for grouping among other palms.

**C. plumosus*. Brazil. 40 feet. A quick growing palm with a slender, smooth trunk and crowned with graceful plummy pinnate leaves. A grand avenue palm. Does remarkably well in Santa Barbara and other points in California, not subject to severe cold spells.

CORYPHA.

**Corypha australis*. (*Livistonia australis*). Australia. One of the handsomest of the fan palms; the fan-like leaves are dark green, supported upon brown petioles, which are armed at their edges with stout spines; well suited for the decoration of apartments; hardy only in localities not subject to severe frosts.

CYCAS.

Cycas revoluta. THE SAGO PALM. China and Japan. 10 feet. This noble decorative palm with its dark brown stem and crowned with its tuft of beautiful pinnated, dark



AVENUE OF WASHINGTONIA FILIFERA. CALIFORNIA FAN PALMS. SEE PAGE 94.

Cycas Continued.

green leaves, which uncurl from the top like ostrich feathers, is unquestionably a magnificent plant. It will grow for months in a room near a window if not exposed to the direct rays of the sun, and the leaves will retain their bright, rich, glossy green appearance. It will grow in the open air, but should have a canopy of burlap over it at least one year after planting out, until acclimated.

ERYTHEA.

These beautiful and very hardy palms have never received the attention they are entitled to, no doubt because they are so little known. They are very hardy, graceful and are worthy of wide dissemination.



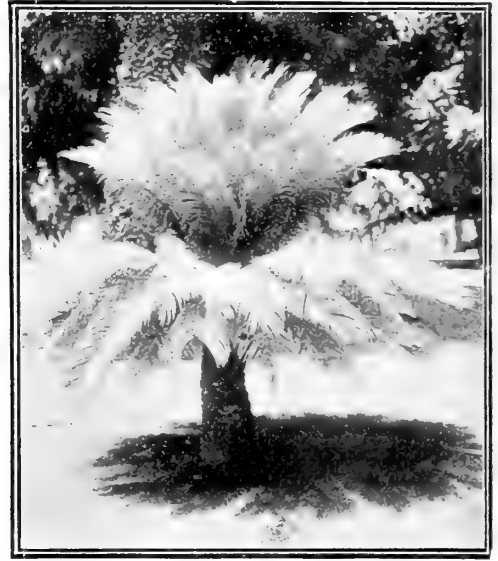
CHAMAEROPS EXCELSA. WIND-MILL PALM.
SEE PAGE 91.

Erythea armata. (*Brahae glauca*). BLUE PALM. Lower California. 40 feet. One of the most exquisite fan palms and very rare. Foliage glaucous blue; very hardy; a pretty palm, especially suited to small gardens.

E. brandegei. Lower California. 125 feet. Discovered only a few years ago by Dr. Brandege in Lower California. The tallest growing of all fan-leaved palms and said to be one of the most ornamental.

E. edulis. GUADALUPE ISLAND PALM. 50 feet. Resembles the California Fan Palm somewhat, but the stem is more slender and graceful; the leaves are without fila-

ments and of a deeper green, so that it is readily distinguished from that variety; perfectly hardy.



CYCAS REVOLUTA. THE SAGO PALM.
SEE PAGE 91.

JUBAEA. The Honey Palm.

Jubaea spectabilis. WINE OR HONEY PALM. A native of Chili. 20 feet. A palm honey, which is very much in demand, is prepared from the sap in its native home. It is one of the hardiest of palms and looks something like a Phoenix, but it is more spreading and of a dwarfer habit. It is readily distinguished by the pinnae which revert to the petiolar stalk and which are also irregularly ar-



SEAFORTHIA ELEGANS. SEE PAGE 94.

ranged, giving the plant a feathery appearance. Truly a magnificent palm, and one always commanding admiration. Makes a very massive trunk at maturity.

KENTIA.

Of all house palms these are more widely used than any other variety. Even when only a foot high they are very attractive with their graceful, arching, pinnatifid leaves, and smooth greenish stems. In the strict sense of the word only raised for house decoration, nevertheless in Santa Barbara and in several of the other southern counties in warm nooks they grow in the open air.

**Kentia belmoreana*. (*Howea belmoreana*). CURLY PALM. Lord Howe's Island. One of the most valuable of house palms; stems gracefully arched, elegant, pinnate leaves; beautiful, even when small.

**K. forsteriana*. (*Howea forsteriana*). THATCH LEAF PALM. Lord Howe's Island. A robust-growing variety only for house culture; very graceful and attractive.

LIVISTONIA. The Latania.

**Livistonia chinensis*. (*Latania borbonica*). China. 6 feet. The most popular palm for decorative work, for apartments or conservatories; leaves large, fan-shaped, of a rich, dark green color; hardy in sheltered spots only.



JUBAEA SPECTABILIS. WINE OR HONEY PALM.

PHOENIX. The Date Palms.

It is needless to say that there are few palms which have done more to add to the semi-tropical appearance of our landscapes than this majestic family of palms. Their massive trunks with their ascending, arching and pendulous pinnatifid leaves causes them to excite admiration wherever seen.

That the genuine fruiting date palm (*Phoenix dactylifera*) will eventually prove to be a tree of commercial importance is borne out by the successful fruitage of this type in the great so called desert country in the extreme southern part of this state, and in several sections of Arizona. In recent years the United States Department



PHOENIX CANARIENSIS. THE CANARY ISLAND PALM.

of Agriculture has taken active steps in introducing from Egypt and Persia the very finest varieties, and they have been successfully fruited, the quality of the fruit produced being equal to the best imported dates. The Date Palm is dioecious, that is the male and female flowers are on



RHAPIS AND MAIDENHAIR FERN.

different plants. It requires one male to the hundred fruiting palms. Until such a time as suckers from the palms introduced by the Department of Agriculture are available, the plants furnished by us will be seedlings, grown from seed of a palm on our grounds, which

Phoenix Continued.

matures its fruits every season. It must be understood that the sex of the seedlings supplied by us cannot be determined beforehand, and the purchaser must take his chances. Where planted for ornamentation alone, the sex of the palm is of no consequence.

Phoenix canariensis. CANARY ISLAND PALM. 40 feet.—The most graceful and the handsomest of our hardy palms; leaves pinnate and of a deep, dark green color; one of the most effective palms on a lawn, and worthy of the attention of all admirers of the palm family; fruit edible, but of no commercial value.

P. dactylifera. FRUITING DATE PALM. Arabia and N. Africa, 100 feet. Produces the famous dates of commerce; fruit is secured by suspending male blossoms in the tree developing female flowers, when the same are in the receptive stage; luxuriates in the strongest alkaline soils, where other trees fail entirely.

P. leonensis. (*P. spinosa*). Africa. 40 feet. A strong growing form fully as vigorous and attaining the height of *P. canariensis*. Trunk rather thick and heavy and fronds with a lightly glaucous tinge, armed at the base with formidable spines.

***P. pumila.** Southern China. 20 feet. A rather dwarf growing kind with beautiful, graceful arching branches proceeding from a slender trunk which never exceeds six inches in diameter.

P. reclinata. DWARF DATE PALM. S. Africa. 12 to 20 feet. Very graceful, drooping leaves; very handsome for avenue or lawn use; not as hardy as some other sorts.

***P. rupicola.** India. 15 to 20 feet. Has wide-spreading, arching leaves, and one of the finest of the genus for pot culture.

P. sylvestris. WILD DATE PALM. India. 25 to 40 feet. Very hardy and useful, the leaves being used for mats, ropes and baskets, and the sap furnishing the palm sugar in its native country; leaves long, arched and of a glaucous green color; closely allied to the date of commerce.

RHAPIS.

***Rhapis flabelliformis.** GROUND RATTAN CANE. China and Japan. A very pretty, cane-like palm, which suckers from the roots like Bamboo, with many-fingered dark green leaves, borne at the end of the reed like stems. This and the following make capital house plants, withstanding much abuse.

***R. humilis.** Low growing, very similar to the preceding, except that the stems are thicker and shorter and the palmated leaves are broader.

SABAL. The Cabbage Palms.

This is a very interesting family. They are very graceful, are not very particular as to soil conditions and are very hardy. Make fine specimen plants and are also well adapted for avenues and roadways.

Sabal adansonii. DWARF PALMETTO. Southern states, 3 to 6 feet. Leaves a dark, rich green, with smooth edged stems; flowering-spike rises above the leaves to a height of six or seven feet; this palm resists

severe cold unharmed, not being injured by temperatures as low as 10 degrees Fahrenheit above zero.

S. blackburnianum. West Indies. 30 to 40 feet. A very distinct, slow-growing variety; leaves long, bluish green.

S. palmetto. CABBAGE PALMETTO. Southern States. 60 to 80 feet. Famous for its historical associations and for the imperishable nature of its wood when under water; leaves long and deeply divided; the bases of the leaf stalks remain on the trunk until the tree advances in age, when they fall off, leaving a rough trunk, eight to ten inches in diameter. This palm is entirely hardy, and on account of its unique appearance is very desirable.

SEAFORTHIA.

***Seaforthia elegans.** (*Archontophoenix cunninghamii*). AUSTRALIAN FEATHER PALM. Queensland, N. S. W. One of the most beautiful of the Palm family, and one of the best in cultivation for the conservatory or greenhouse; the pinnate leaves are two to ten feet in length, dark green and perfectly smooth. Perfectly hardy in many places in southern California.

WASHINGTONIA. The Fan Palms.

Washingtonia filifera. CALIFORNIA WEEPING PALM. 80 feet. It is perhaps the most characteristic palm of California and it originates from San Bernardino county. Trunk attains a diameter of 4 feet and is covered with shields of dead leaves; leaves fan shaped, with numerous divisions and whitish filaments. Petioles stout, smooth, five to six feet long and margined with stout hooked spines.

W. robusta. (*W. gracilis*). 100 feet. This is a very distinct type from the preceding. Although the leaves have a more weeping tendency, they are much greener and the white filaments are not so numerous. The petioles are much more heavily armed. It is an exceedingly rapid grower, outstripping the *W. filifera* two to one, with a trunk much less than one-half the thickness. Although it has an immense crown of leaves, it withstands the strongest winds without injury. It flowers very early in the summer and its seeds are fully twice as large as the other two varieties. A distinct type having its origin from the same place.

W. sonorae. Lower California. 25 feet. One of the hardiest and most beautiful of Palms; in habit of growth resembling our well-known California Fan Palm, but more symmetrical and of a dwarfer habit; leaves fan-shaped, medium size, few or no filaments; retaining its dark green color during the winter months; leaf stems short, thorny, of upright, compact growth with dark leaf-sheaths and very dark margins and spines. It is very much hardier than the California Fan Palm and will no doubt be extensively planted, when its value as a decorative plant is fully appreciated.

WASHINGTONIA ROBUSTA.



PHYLLOSTACHYS CASTILLONIS. GOLDEN DWARF BAMBOO.

AGAVES, BAMBOOS, DASYLIRIONS, DRACENAS, YUCCAS.

AGAVE. The Century Plant.

Agave americana. COMMON CENTURY PLANT. Tropical America. The well-known, so-called Century Plant, with glaucous green leaves.

A. americana variegata. A variegated form of the preceding with leaves edged with a broad margin of rich yellow.

DASYLIRION.

Highly ornamental plants suitable for terraces, vases and formal gardens. Trunk short or missing altogether and leaves inserted in such a way as to form a dome or globe-shaped head. The tall peduncle, with its inflorescence of whitish green flowers is also very striking. Will grow in the driest of locations.

Dasyllirion glaucophyllum. (*D. glaucum*). Mexico. 12 feet. A grand plant, with compact head of leaves, fringed at the edges with small teeth.

D. graminifolium. (*D. longifolium*). Mexico. 8 feet. A very handsome plant, with long, narrow leaves proceeding from a common center and drooping to the ground; very desirable for a lawn; very hardy; sends out an immense spike covered with small, delicate, yellowish-white flowers.

D. serratifolium. Northern Mexico. 3 feet. A Yucca-like plant, with leaves two feet long and one inch broad and armed; flowers white borne on a long stem in a dense panicle.

DRACAENA.

Are very fine avenue, street and single specimen trees in the coast counties where the climatic conditions are favorable to their perfect development. Do not thrive so well in the interior. Excellent for house decoration.

Dracaena australis. (*Cordyline australis*). New Zealand. 20 feet. A very fine species, with a stout branched stem and with flag-like leaves, two to three feet long.

D. draco. DRAGON TREE. Canary Island. 50 feet. A stately tree with numerous crowned sword-shape leaves, somewhat recurved. One of the hardiest and best.

D. indivisa. (*Cordyline indivisa*). New Zealand. 30 feet. A much more rapid grower than the preceding, with longer narrow leaves. Fine for hall or porch decoration.

FOURCROYA.

Fourcroya bedinghausii. Mexico. 16 feet. A very graceful plant with a very stout trunk and crowned with long, leathery, gracefully drooping bluish leaves. Flowers greenish, produced on a long scape 15 to 20 feet high.

PANDANUS. The Screw Pine.

Pandanus utilis. SCREW PINE. Madagascar. 60 feet. The well-known "Screw Pine," so called from the screw-like arrangement of the leaves around the stalk; leaves green, with small red spines along the edge; a very handsome house and conservatory plant.

YUCCA.

These are among our most effective plants; palm-like, with spikes of white flowers; they require, after being established, no care, and will flower year after year. A group of these plants will always remain very attractive; the foliage is in some varieties bluish, in others, green and white.

Yucca aloifolia quadricolor. Very fine; beautifully variegated and marked with narrow stripes of yellow and green.

Y. aloifolia variegata. A very rapid grower with broad leaves and broad bands of yellow.

Y. angustifolia. Rocky Mountain region. A tall growing species with long, narrow leaves and a white marginal line along the edges, and fine spikes of immense, creamy white flowers.

Y. baccata. SPANISH BAYONET. Arizona. Low, compact grower, leaves very rigid, yellowish green, with thick marginal threads. Flower inflorescence 5 to 6 feet long, on an elongated peduncle.

Y. filamentosa. ADAM'S NEEDLE. Southeastern U. S. A variety of compact growth, with dark green leaves and majestic spikes of yellowish-white flowers.

Y. whipplei. California. Very fine; sends up a flower-like stem eight feet high.

BAMBUSA. The Bamboos.

Not only very useful but exceedingly ornamental plants. In Japan they are regarded as a necessary part of the existence of the inhabitants and immense forests of them are to be found throughout the Empire. They seem to do well in any reasonably good soil and they should be planted by every farmer. All the leading varieties of Japan seem to find the conditions in California very favorable for their rapid growth. They are very decorative house plants, are fine as single specimens on the lawn and for grouping; with their airy foliage, graceful bending branches and their very rich coloring of green, there are but few plants which will compare with them for producing immediate striking effects.

Arundinaria japonica. ARROW BAMBOO. Japan. 12 feet. Arrows were formerly made from the reed-like shoots of this plant; nodes very prominent; stalks very smooth and shiny. It is also extensively used for supporting pot plants. Will withstand severe cold.

Bambusa argentea striata. SILVER VARIEGATED. China. A decorative garden plant, slender and graceful; leaves variegated; makes a splendid pot plant.

B. vulgaris. COMMON BAMBOO. India. This beautiful tall quick-growing bamboo is one of the best for tropical effects. Its stems attain a height up to 70 feet and 4 inches in diameter, and the weight of the feathery foliage causes them to arch gracefully.

Dendrocalamus latifolius. Japan. 40 feet. One of the most desirable and impressive of bamboos, with erect

Bambusa Continued.

stems 3 to 4 inches through, straight as a rocket and clothed with broad, long leaves, which retain their bright green color better than any other giant bamboo. Of very rapid growth, making a showing within a few years.

Phyllostachys castillonis. GOLDEN DWARF BAMBOO. Japan. 6 to 20 feet. Stems one inch or more thick, much zigzagged, bright yellow, with double groove of green leaves, striped yellowish white. A fine decorative plant for home culture or for outdoors.

P. henonis. (*Bambusa Henonis*.) VOLATILE BAMBOO. Japan. 15 feet. Very ornamental; when fully grown stems are two inches in diameter; grows thick and bushy and forms an excellent shelter against wind.

P. mitis. NOBLE BAMBOO. Japan. 30 feet. The tallest bamboo; stem often six inches in diameter; used in Japan for water pipe, furniture, etc.; young sprouts are eaten as a vegetable.

P. nigra. BLACK STEMMED BAMBOO. China and Japan. When fully grown, the shoots of this variety are black; attains a height of 15 to 20 feet; one of the most ornamental of this family, the black stalks and branches forming a marked contrast with the bright green foliage.

P. quilioi. GIANT BAMBOO. Japan. 50 to 75 feet. Stems four to five inches in diameter at the base; leaves the largest in the family; of easy growth and very ornamental.

DECORATIVE BEDDING AND BORDER PLANTS.

ABUTILON. The Flowering Maples.

Abutilon. We have a very fine assortment of these beautiful shrubs, with large, maple-like leaves and golden and crimson flowers. A group of abutilons in flower is one of the finest decorations possible.

ACHANIA. The Turks Cap.

Achania malvaviscus. A vigorous growing plant, resembling the Abutilons in habit and growth and valuable for pot culture or bedding. Flowers are brilliant crimson and appear during the entire summer.

ACALYPHA.

Acalypha bicolor compacta. A fine plant for green-house decoration, but its most important feature is its fine bedding qualities, doing well in the sunniest places. The leaves are bright green with irregular bands and yellow blotches.

ALTERNANTHERA.

Gorgeous foliage plants used for carpet and ribbon gardening.

Alternanthera aurea nana. A handsome dwarf yellow.

A. paronychioides major. Bright red, the best of this shade.

ANTHERICUM.

Anthericum variegatum. S. Africa. Beautiful plants with re-curved graceful foliage. Leaves are dark green, beautifully marked with broad stripes of creamy white.

ARUNDO DONAX. The Giant Reeds.

Arundo donax. GIANT REED. Europe and Asia. 12 to 15 feet. Sometimes called false bamboo. A tall, graceful reed which grows very rapidly, clothed with broad, pointed leaves and covered with tall showy reddish plumes in the fall months. Excellent for giving immediate effects in aquatic scenes and to conceal unsightly objects.

A. donax variegata. VARIEGATED GIANT REED. Not quite as tall as the preceding but very striking with its longitudinally striped green and creamy white leaves.

ASPARAGUS. The Asparagus Ferns.

Asparagus comoriensis. Similar to *A. plumosus*, but more robust, darker green, softer foliage.

A. plumosus. A beautiful climbing plant, with bright green, gracefully arched foliage, surpassing Maiden Hair Fern in grace, delicacy of texture, and richness of color.

A. sprengeri. Natal. A most desirable new species especially useful to grow as a pot plant for decorative purposes, or for planting in suspended baskets; flowers white, followed by red berries, the fronds are frequently four feet long, are of a rich shade of green, and most useful for cutting, retaining their freshness after being cut for weeks; it will make an excellent house plant, as it withstands a dry atmosphere.

A. tenuissimus. S. Africa. A beautiful climber; used largely for floral work. Can be grown outside of a north wall in many parts of California.

ASPIDISTRA.

Aspidistra lurida. China. A very pretty foliage plant for house or green-house decoration, with dark green, long leaves; produces odd-looking purplish flowers above the ground. Thrives under the most unfavorable conditions, retaining its fresh appearance even where it does not receive sufficient air, light or water.

A. lurida variegata. Similar to the preceding, except that the leaves are broadly margined and striped with white.

BEGONIA.

Begonia. We have a fine collection of these showy brilliantly foliaged plants with many-colored, delicately shaded flowers.

BELLIS. The Daisies.

Bellis perennis. ENGLISH DAISY. Europe. Very pretty double flowering plants with numerous showy double flowers borne on stems 6 inches long, varying in color from white to pink. They appear for several weeks in the spring.

CANNAS.

Cannas. Very attractive plants with large green leaves, often shaded with red and crimson. Flowers in a great array of colors and appearing from spring until fall. For producing tropical garden effects and for borders they are invaluable. Out of the many hundreds of varieties introduced in recent years, we have only selected those which are typical of the improved sorts. Those who order from us will, we are quite sure, commend our selection. For descriptions and list of varieties refer to price list.

CAREX.

Carex japonica. An extremely useful house plant, introduced from Japan; the blades, with a green center and white edges make it very effective for vases and hanging baskets.

CENTAUREA. The Dusty Miller.

Centaurea candidissima. DUSTY MILLER. A valuable bedding plant with downy very white, bi-pinnatifid leaves and producing purple flowers. Grows very rapidly and makes an immediate effect.

CHRYSANTHEUM.

Chrysanthemum. Very careful attention has been given to the culture of these beautiful winter-blooming plants, which now embrace nearly every shade of color, and the varieties we offer are the very best of the several distinct classes. They will thrive in almost any soil, and as they are the only plants that bloom at that season of the year, no garden is perfect without them. For list of varieties and descriptions refer to price list.

CHRYSANTHEMUM. The Shasta Daisy.

Chrysanthemum hybridum. THE SHASTA DAISY. Among the many flowering plants introduced by Burbank none of them have been as widely disseminated as this very free summer flowering plant. The immense white flowers 4 inches and over across with a yellow center, are borne in the greatest profusion on long stems.

CHRYSANTHEMUM. The Marguerites.

These precocious flowering plants are one of the features of the drives in the southern counties of California. They present a mass of bloom at all seasons of the year and add color to the somberness of groups of dark foliaged evergreens.

Giant white. Flowers large, with extra broad petals of purest white.

Giant yellow. Very similar to the preceding except that the blooms are of a deep yellow color.

Queen Alexandre. (*New*). A great improvement over the single flowered varieties, the center instead of being yellow is filled with miniature white petals, producing an impression of a double flower.

COLEUS.

Coleus. We have a fine collection of these many-tinted and shaded foliage plants.

CUPHEA.

Cuphea ilavea. RED WHITE AND BLUE FLOWER. Guatamala. A remarkable flowering plant, combining three distinct colors, scarlet, purple and white; belongs to the same family as the "Lady's Cigar Plant," but is vastly superior to it. The plant is bushy, and presents an elegant appearance; always in bloom.

CYPERUS. The Umbrella Plants.

Cyperus alternifolius. UMBRELLA PLANT. Madagascar. A very desirable house plant; bearing upon erect jointless stems a crown of long, narrow leaves, resembling in shape a small umbrella; easy culture; requires an abundance of water.

C. lucidus. Leaves numerous, large and broad, spikelets of flowers, on long graceful linear stems, all diverging from a common point on one or two foot stems.

C. papyrus. EGYPTIAN PAPER PLANT. With erect tall stems 4 to 8 feet high and a tuft of narrow, drooping leaves diverging from a common center. A valuable plant for aquariums and damp soils.

DIANTHUS. The Carnations.

Dianthus caryophyllus. CARNATIONS. Our assortment of carnations consists of the leading standard varieties and we are adding new varieties from time to time to our collection, as soon as their merits have been demonstrated. Refer to price list for varieties and descriptions.

ECHEVERIA. The Hen and Chickens.

Echeveria. HEN AND CHICKENS. A very pretty class of succulent plants, suitable for rockeries, edging or carpet-bedding.

EULALIA.

Eulalia japonica. JAPANESE EULALIA. Very vigorous and graceful, with long, narrow, rich green drooping leaves 6 to 9 feet long, and flower panicles which shoot far above the foliage, appearing in the late summer months.

E. japonica variegatus. JAPANESE STRIPED GRASS. A very robust, perennial grass from Japan, with graceful leaves, marked with alternate stripes of white and green. The flower stalks appear in September, and the plant is then four to six feet high.

E. japonica zebrina. JAPANESE BANDED GRASS. In form and habit this resembles the above, but differs essentially in the manner of variegation, the markings running crosswise.

FERNS.

Ferns. We offer a very nice collection of these graceful, delicate foliaged plants. To grow them successfully, they should be grown in a shaded place.

Adiantum cuneatum. The well known Maiden-hair Fern, the most popular of all. Requires house or conservatory culture, as it is quite tender.

Aspidium tsussimense. A pretty species with deeply cut fronds; one of the best for fern dishes.

Asplenium nidus avis. BIRD'S NEST FERN. The fronds of these curious ferns are long and broad, with a dark colored mid-rib; in the center there is a hairy growth, having the appearance of a bird's nest, hence the name.



ASPARAGUS SPRENGERI AND ANTHERICUM VARIEGATUM.

SEE PAGE 96.

Cyrtomium falcatum. HOLLY FERN. An elegant hardy species with rather broad pinnae of a deep glossy green color. Does well in pots and is also adapted to outdoor culture.

Nephrolepis exaltata. SWORD FERN. A most splendid hardy sort, thrives as well outside as indoors. Fronds have a decidedly upward tendency.

N. exaltata bostoniensis. BOSTON FERN. One of the most useful ferns for house culture, grows well and improves in size where most other ferns fail. The fronds droop and arch gracefully over the edge of a pot or basket, making it very attractive.

N. exaltata piersoni. OSTRICH PLUME FERN. A sport from the Boston Fern with the pinnae peculiarly subdivided and frilled, giving a novel feathery effect to the foliage. A striking variety.

Pteris serrulata. A most graceful fern with long, slender, brownish stalks and narrow ribbon-like long leaves. A very desirable house-decorative plant.

P. cretica albo lineata. One of the best for a fernery, being of very rapid growth, fronds variegated, long and arching.

FUCHSIA.

Fuchsia. Tropical America. A very pretty and charming class of plants, requiring good rich soil and partial shade in order to succeed well; desirable for pot culture; when in full bloom present a very pretty appearance. Our limited collection embraces the very best varieties.

GERANIUM.

Geraniums although the most common of our herbaceous plants, have never lost their attraction, being



PHLOX. SEE PAGE 99

floriferous summer and winter flowering plants in California. The marked improvement which has been made in them in recent years will do much to add to their popularity. Some of the single flowered varieties will measure from 2 to 2½ inches across with trusses in proportion. Their colors range from the most delicate hues to the boldest and most dazzling of tints. We have used the utmost care in the selection of varieties and our list although limited, will be found to comprise only the very best of the improved types. Kindly refer to price list for descriptions.

GYNERIUM. The Pampas Grass.

Gynerium argenteum. PAMPAS GRASS. S. America. This is a splendid grass with its 5 to 8 foot stems forming a dense clump. Its leaves are long and narrow and droop

gracefully. Plumes are silvery white, very showy, sometimes 2 feet or more in length.

G. argenteum roseum. General habit same as the preceding, but the plumes are distinctly fleshy pink.

G. argenteum variegatum. Foliage beautifully edged with silver.

HELIOTROPIUM. The Heliotrope.

Heliotropium. These very interesting plants deserve attention on account of their rich, fragrant flowers, and dark green leaves. With plenty of water they thrive well in this climate. In the coast counties they grow and bloom during the entire year.

HIBISCUS.

Hibiscus rosea-sinensis. CHINESE HIBISCUS. Very showy plants, fine for house and green-house decorations. The foliage is bright glossy green and they produce flowers in the most gorgeous colors.

Double crimson. Beautiful crimson color, very satisfactory as single specimens or for hedges in favored localities.

Peach Blow. Of remarkable beauty; flowers single, color a delicate soft rose, with shadings of salmon.

IMANTOPHYLLUM.

Imantophyllum hybridum. S. Africa. A pretty lily-like plant of the easiest culture. Flowers 2 inches long and borne in dense clusters of from 10 to 20 blossoms each; color fine orange red, changing to buff.

LANTANA.

Lantana. Our collection consists of a selection of the best of the recently introduced varieties. They are very desirable for their free blooming qualities and their ready adaptation to any ordinary garden soil. The newer varieties grow compactly and are of spreading, bushy habit.

LAVENDULA. The Lavender.

Lavendula vera. This is the true sweet Lavender with delightfully fragrant blue flowers in July and August.

LOBELIA.

Lobelia erinus. Few plants are more effective in their season of bloom extending from July until October, than the Lobelias. They thrive in any ordinary garden soil and are fine for hanging baskets. Their flowers vary from white to deep blue.

MENTHA. The Mint.

Mentha rotundifolia variegata. A very pretty border plant with its round variegated green and yellow leaves. Gives off a peculiarly pleasant mint-like odor when its leaves are bruised.

MUSA. The Banana.

Musa ensete. ABYSSINIAN BANANA. This magnificent foliage plant, if given plenty of water, attains a height of 12 feet in a single season. This variety produces no suckers, and requires several years to come into flower and seed, then it dies.

PELARGONIUM. The Lady Washington Geraniums.

Pelargonium. A class of handsome flowering plants commonly known as "Lady Washington Geraniums." They produce beautiful trusses of rich flowers in the spring and early summer months. Our collection consists of the best of the latest introductions, which are fully described in price list.

PHLOX.

Phlox. Among the hardy perennial plants no class is of more importance than the phloxes, succeeding in almost any position and flowering from the early summer until late in the fall. They contain a range of colors found in but few plants. Refer to price list for varieties and descriptions.

PHORMIUM.

Phormium tenax. NEW ZEALAND FLAX. Large, erect; dark green leaves, with narrow, reddish-brown margin.

P. tenax variegata. VARIEGATED NEW ZEALAND FLAX. This variety has shorter leaves, and has broad, creamy-white stripes extending the entire length of each leaf. A grand lawn plant and also very desirable for grouping or as single specimens.

PILEA.

Pilea microphylla. ARTILLERY PLANT. A very pretty species of greenhouse plant with compact fern-like sprays; attractive for the interesting phenomenon of forcibly discharging the pollen, hence the name Artillery Plant.

POGOSTEMON. The Patchouli Plant.

Pogostemon heyneanus. PATCHOULI PLANT. This species affords the celebrated Patchouli perfume of the Hindoos; the odor is very peculiar and is one of the commonest perfumes found in the bazaars.

POINSETTIA.

Poinsettia pulcherrima. Introduced from Mexico. This is the well known plant so generally grown in southern California. Its long stems, large leaves and great scarlet bracts surrounding the flowers, produced in the winter, cause it to be valued very highly for holiday decorations.

PRIMULA. The Primrose.

Primula. The Primulas are very free flowering plants; with their dark green foliage and stems of large flowers, varying in color from pure white to rich crimson, they make fine decorative plants.

ROMNEYA. The California Tree Poppy.

Romneya coulteri. CALIFORNIA TREE POPPY. A native of California, it is deserving of extensive cultivation. It is a perennial and its large white blossoms, the largest of the poppy family, appear all summer. It is a very effective plant, the whiteness of its petals combining with the golden yellow stamens render it one of the most beautiful of our summer flowering plants.

RUDBECKIA.

Rudbeckia. GOLDEN GLOW. A grand hardy perennial plant; produces immense quantities of double golden-yellow flowers on stems 4 to 6 feet long in the fall months.

SALVIA.

Salvia. Very handsome and rapid growing plants, flowering all summer. Valuable for bedding purposes.

SANTOLINA.

Santolina incana. (*Chamaecyparissus*). LAVENDER COTTON. For the interior valleys, there are few plants which will compare with this for border purposes. It is apparently unaffected by heat, drought, or cold, and always maintains its silvery white color. It makes a neat low hedge.

SAXIFRAGA.

Saxifraga sarmentosa. A handsome plant of low habit; leaves nearly round, and striped freely with silver bands; blooms white, borne in spikes 12 inches long. Fine for hanging baskets and vases.

SEDUM. The Stone Crop.

Sedum acre. Among hardy trailing plants suitable for rockeries and trailing purposes, there are few plants more desirable than these.

SOLANUM. The Jerusalem Cherry.

Solanum psuedo capsicum. JERUSALEM CHERRY. A very useful pot plant for winter decoration. It is of branching habit, with bright shining green leaves and bearing bright scarlet, globular berries in great profusion.

THYMUS.

Thymus. THYME. We grow two varieties; the common Thyme with its plain green foliage and the variegated variety. They are very desirable plants for edging. The leaves and shoots are used for seasoning.



ROMNEYA COULTERI CALIFORNIA TREE POPPY.

TRADESCANTIA. The Wandering Jew.

Tradescantia. WANDERING JEW. Very fine decorative plants of which we grow three varieties. They are fine for hanging baskets, for jardinières and vases. They will cover the ground quickly if grown in partial shade.

TRITOMA. The Red Hot Poker.

Tritoma uvaria. RED HOT POKER. S. Africa. A fine, late-blooming plant, with bright, orange-scarlet flowers, borne on long straight stems.

VERBENA.

Verbena. We have succeeded in obtaining the latest introduced varieties of these plants, the flowers of which are far superior to the old sorts. Refer to price list for varieties and descriptions.

VINCA. The Periwinkle.

Vinca. PERIWINKLE. Showy, creeping plant; will thrive in the sun or in spots too shaded for grass to grow, and admirably adapted for borders or rock work.

V. major. LARGE PERIWINKLE. A beautiful trailing plant, with deep glossy green leaves and trumpet-shaped pale blue flowers.

V. major variegata. VARIEGATED PERIWINKLE. Leaves glossy green, broadly margined with creamy white and blue flowers.

VIOLA ODORATA. The Violets.

Viola California. A single blue violet; a profuse bloomer and very fragrant; flowers borne on long stems.

Marie Louise. Deep blue violet, with white center; very fragrant and free flowering.

Princess of Wales. Of French origin and recently introduced; flowers of the largest size, of a true violet blue, and borne on long stems; very fragrant; foliage dark and of strong growth.

Swanley White. Large, double white flowers.

VIOLA TRICOLOR. The Pansies.

Viola tricolor. PANSY. Extra choice varieties, from the best imported seed; flowers flamed, striped and blotched.

BULBS AND TUBEROUS ROOTED PLANTS.**AGAPANTHUS. The African Lily.**

Agapanthus umbellatus. AFRICAN LILY. S. Africa. A fine plant, with long, rather fleshy leaves, and bearing a many-flowered umbel; flowers of a bright blue color.

AMARYLLIS.

Amaryllis hippeastrum. Under this head we have a fine collection of hybrids of the Vittata group. The flowers attain enormous proportions and have a wide range of color and variations. Our bulbs are exceptionally large and will bloom profusely during the spring and summer months.

A. belladonna. Sends up a number of shoots in August covered with large rosy pink blossoms, somewhat lighter at the throat.



RICHARDIA ELLIOTTIANA.
NEW GOLDEN YELLOW CALLA.

borne on long stems; flowers of various shades and of peculiar form, appearing from November to May.

DAHLIA.

Dahlia. Tropical America. We grow a fine assortment of double and single varieties of these elegant, showy plants. The tubers should be taken up in winter in cold countries, but in California they may be left in the ground for years.

GLADIOLUS.

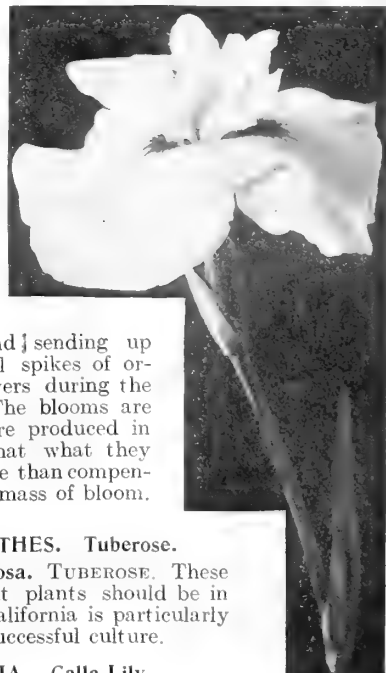
Gladiolus. Our collection comprises the very latest in-

troductions, including the premier of all "America." These improved types should not be confused with obsolete varieties. They must be seen to be appreciated.

IRIS.

Iris germanica. Central Europe. These are neat, robust, hardy, herbaceous, early blooming plants, with large, ornamental flowers of rich and beautifully blended colors, appearing in April and May. Our collection comprises the latest introductions.

I. kaempferi. JAPANESE IRIS. This is the well-known beautiful flag-like flower of Japan, displaying a great diversity of color, some of the flowers measuring 10 to 12 inches across. Will grow in almost any soil, but do best in moist situations. For gorgeousness of color there are few plants which will equal them. Our collection comprises the very best sorts introduced by us from Japan.



IRIS KAEMPFER.
JAPANESE IRIS.

MONTBRETIA.

Montbretia. germanica. A beautiful bulbous plant, with long, grassy foliage and sending up numerous graceful spikes of orange colored flowers during the entire summer. The blooms are small but they are produced in such quantities that what they lack in size is more than compensated for by their mass of bloom.

POLIANTHES. Tuberose.

Polianthes tuberosa. TUBEROSE. These deliciously fragrant plants should be in every garden. California is particularly adapted to their successful culture.

RICHARDIA. Calla Lily.

Richardia aethiopica. CALLA LILY. The well known Calla Lily of the Nile with rich dark green foliage and pure white flowers.

R. elliottiana. NEW GOLDEN YELLOW CALLA. Entirely distinct and unlike all other forms of yellow Callas; it has the same habit of growth as the ordinary white variety with flowers of the same shape, as large and even larger, but of a rich, clear golden yellow color; the foliage is dark green and beautifully maculated with silvery white spots.



SINGLE CHEROKEE ROSE. SEE PAGE 105.

THE ROSE.

AMONG all the flowering shrubs that grace the garden or add to the beauty of hall or conservatory, none can compare to the rose. Of diverse color, and character of foliage, of endless design and color of blooms, it lends itself to a wider range of decoration than any other single group of plants, being equally desirable as pot plants, for garden culture; and for cut flowers. When to these qualifications are added ease of culture and quick and ample responses in flowers, it is explained why the rose has been aptly termed, "The Queen of Flowers." In our collection of flowering and ornamental shrubs, it occupies first place; hence we have been careful to always have on hand a large stock of only the most vigorous plants, and only those sorts producing freely of blooms possessing good substance and strikingly individual characteristics. All our roses are field grown, thus insuring plants of strong constitution and robust growth. Some objections have been expressed to budded roses, owing to the fact that plants are apt to sucker. This is readily overcome by setting the junction of the bud with the stock under ground. If planters will observe to do this, much of this difficulty will be removed. These shoots or suckers are easily distinguished by their rampant growth and thorny and coarse like appearance. They should be removed as fast as they appear. Budded roses grow far more vigorously than those on their own roots and are longer lived, so that the slight additional expense incurred to begin with, is more than compensated for in having superior plants.

The aim has been in giving descriptions of the different varieties to be conservative in statement and clear in expression, preferring at the same time to be modest in opinion rather than to overpraise. In habit of growth, blooming qualities, vigorous root development our plants are the delight of rose lovers and home gardens. The

inexperienced are advised to study the cultural directions, which are based on California conditions, and hence will be quite sure to afford satisfactory results if carefully followed.

PLANTING.

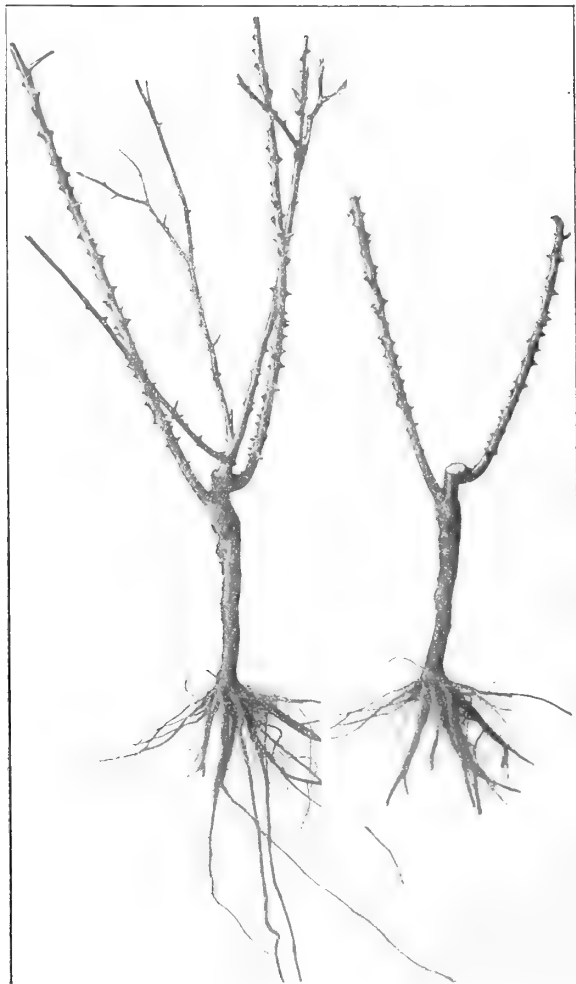
The best season of the year for planting roses is from December 1 to March 15, with the recommendation in favor of early planting. In planting, the same care should be observed as with any other tree or plant, the ground should be spaded thoroughly, and if any well rotted manure is available, it should be worked into the soil. Dig the hole large enough to receive the roots. Prune the top, cutting back the branches at least one-half, and thinning out those that are too thick. The roots should also be cut back one-half, and all bruised roots removed. After planting settle the soil around the plant by watering freely

PRUNING.

No definite rule can be laid down for pruning roses except that Teas and their allied families do not require as severe pruning as the Hybrid Perpetuals and others of equally as vigorous growth. There is one fast rule, however, on the Pacific Coast and that is never to allow roses to go unpruned. The best time is from December 15 to March 1. The first winter after planting, thin to three main shoots and cut these back at least two-thirds. In after years with the frame work branches established, the laterals should be thinned out to prevent overcrowding, and those allowed to remain should be cut to spurs of about four buds each. If this method is followed regularly each season, a properly pruned plant will have the shape of a deer's antlers. With climbers the frame work branches should be trained up against the wall in the shape

of a fan, not leaving more than three to four and these should be cut back severely the first two seasons to promote vigor and sturdiness of growth. In after years shorten in the laterals and thin out sufficiently to prevent overcrowding, otherwise the plant will be a mass of dead wood and twisted branches and its vigor will become seriously impaired.

When the roses have stopped blooming in the early summer, the faded buds should be cut and the plants should be given a light pruning, or more correctly a pinching back, which will have the effect of making them respond with a bounteous bloom in the summer and fall.



UNPRUNED AND PRUNED ROSE BUSH.

The figure to the right shows how to prepare the rose for planting.

STANDARD ROSES.

Commonly known as Tree Roses, are budded on a vigorous Manetti rose stock $3\frac{1}{2}$ feet from the ground. They are very effective and if the head is shortened in and thinned out the plant becomes very symmetrical and responds with a wealth of bloom which is surprising. The first two seasons, wrap the stem with paper or burlap to prevent sunburn and cut away all suckers appearing below the crown.

DISTANCE TO PLANT.

Set bush roses 2 to $2\frac{1}{2}$ feet apart; standards 4 to 6 feet apart; for hedge purposes 2 feet apart except the Poly-

antha types which are more dwarf in their habits and permit of being more closely planted. The reader will notice that we have arranged this list in alphabetical order, irrespective of the class or group to which a variety may belong. To afford the novice, however, means of distinguishing one class from another, we have prepared the following explanatory paragraphs.

BANKSIAS.

Roses of this class have very small flowers, and bloom in clusters; are vigorous climbers and very useful for covering trellises, etc. With their small but most abundant flowers, interspersed among the smooth, glossy green foliage, they form an object of great beauty; require very little care when once established.

BENGALS OR CHINAS.

Natives of China. Of moderate growth and not very fragrant. The foliage and flowers are small. They are valuable for borders on account of their compact growth and the profusion of brilliant crimson buds they produce.

BOURBONS.

The varieties of this class differ greatly in their general characteristics; those of moderate growth require close pruning. They are constant bloomers; the flowers are generally of light shade; the foliage is leathery, rich and luxuriant; they are at their best in the autumn.

HYBRID NOISETTES.

These roses are always in bloom, and are very valuable; should be in every collection, where they are sure to give satisfaction.

HYBRID PERPETUALS.

These constitute a very striking and distinct family of roses, easily distinguished from all others by their luxuriant foliage, prodigious blooms and vigor of growth. They are perfectly hardy and of very robust habit, thriving with little care or attention. The more vigorous growers require close pruning. Although styled perpetual bloomers, they are not so in reality, blooming only in the Spring and Fall. As a class they are deservedly popular, varying in color from snow white to the deepest crimson.

HYBRID TEA.

The roses in this group are vigorous growers and produce flowers in great profusion during the entire season, of fine form and of brilliant colors. They should be pruned moderately or even severely should they make a rampant growth.

JAPANS OR RUGOSAS.

Of Japanese origin. The flowers are mostly single; plant highly ornamental on account of its good habit and beautiful glossy foliage.

MISCELLANEOUS.

Under this head we have placed a number of different varieties, belonging to separate classes, as there is not enough of any one class to warrant separate classification.

MOSSSES.

The Moss Rose originated in Switzerland. Sepals are covered with moss-like glands; unsurpassed as buds. Should be heavily pruned in the winter.

NOISETTES OR CHAMPNEYS.

This class of roses is of American origin. The group is of vigorous growth and the flowers have a tendency to grow in clusters. With a few exceptions all the varieties are vigorous climbers, and their rich bright green foliage,

combined with the delicate tinted flowers, render them most attractive for this purpose.

POLYANTHAS.

This is a new group from Japan. They are ever-blooming; flowers are small but exquisitely formed, and are borne on slender stems in panicle clusters. Growing low and compact, they are very desirable for edging.

PRAIRIES.

This is a very distinct class, remarkable for its hardiness. The leaves are large, rather rough, and of a rich dark green color. They grow very rapidly, exceeding in this respect any other variety, and are excellent for covering walls, and old buildings; bloom in large clusters after all common roses are gone and present a very striking appearance.

TEA OR EVER-BLOOMING.

This is one of the most important groups of roses and on account of their free flowering qualities, exquisite fragrance, combined with their delicate tints, and fine form, are deservedly popular. They require more care and attention than any of the other classes and should not be pruned too closely.

NEW VARIETIES.

Baby Rambler. POLYANTHA. (*Mme. Norbert Levasseur*.) A cross between Crimson Rambler and one of the Polyantha sorts, but instead of climbing it forms a dark, compact bush, not over 11 inches high, loaded down with heavy clusters of bright crimson flowers similar to Crimson Rambler. It blooms from early Spring until late in the Fall and is destined to become one of the most popular varieties for bedding.

Banksia, Single White. BANKSIA. Identical with the popular Banksia in character of growth with the exception that the flowers are white and single.

Bessie Brown. HYBRID TEA. Creamy white; the blooms are of immense size and substance; petals very smooth and shell shaped; highly perfumed. A fine exhibition rose.

Betty. HYBRID TEA. Introduced by Messrs. Dickson & Sons, Belfast, Ireland. It stands in the same class as the Belle Siebrecht and Killarney, with the exception that it is a more robust grower and is truly of a unique color, being of a ruddy gold, overspread with golden yellow. It is deliciously perfumed, extremely large and of glorious form and blooms continuously from early Spring till late in the Fall.

Clara Watson. HYBRID TEA. A vigorous grower sending up strong canes, clothed with heavy foliage; pearly white, center tinted pale peach; large well formed blooms; a free and continuous bloomer.

Climbing Bridesmaid. TEA. Identical with its well-known, popular and unrivalled parent, the Bridesmaid, with the exception that it is a thrifty climber; in every respect a grand rose.

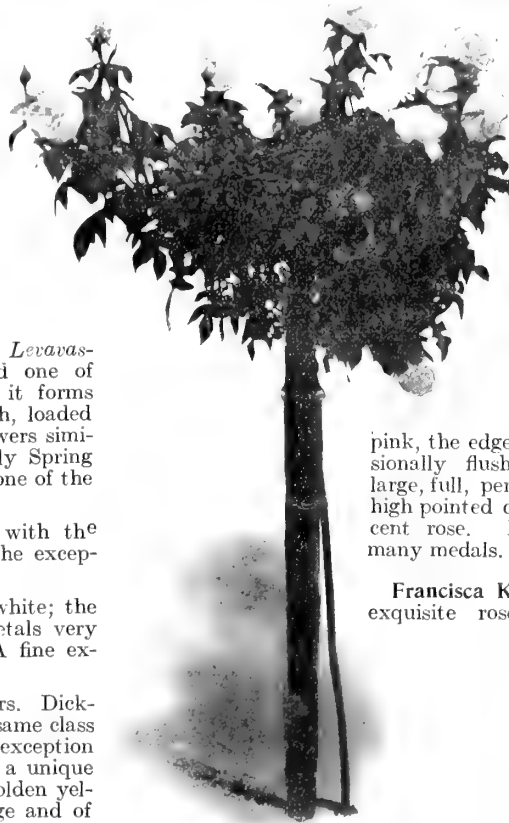
Climbing Caroline Testout. HYBRID TEA. This most wonderful rose is identical with that most beautiful and very free flowering rose Madame Caroline Testout, except that it is a most vigorous climber, canes making a growth of 12 feet in a season and an inch through. No garden should be without this magnificent rose.

Climbing Mademoiselle Cecile Brunner. POLYANTHA. An exact counterpart of the great favorite bush rose of the same name, except that it is a very much stronger grower. Flowers perfectly double, rosy pink, petals in bud daintily reflexed. Delightfully fragrant and in every respect a most exquisite rose. A vigorous climber.

Climbing Papa Gontier. TEA. The bush form of this very popular rose is well known; this new rose possesses all its merits, flowers of exquisite substance, color rosy crimson beautifully formed buds, and with it all a wonderfully vigorous grower and climber.

Dr. Wm. Gordon. HYBRID PERPETUAL. This is a beautiful rose, an exquisite shade of pink, petals edged with white and prettily imbricated; the flowers are large and well formed. An unusually strong grower. It combines so many desirable qualities that it deserves a prominent place among the new roses.

Etoile de France. HYBRID TEA. Received a gold medal in France and the introducer, J. Pernet Ducher, the originator of so many grand roses, claims that it is one of the finest roses ever sent out. The flowers are very large and borne on good, long stiff stems; color a lovely shade of clear, red-crimson velvet; very fragrant and keeps well. A superb rose and sure to be a great favorite.



Florence Pemberton. HYBRID TEA. Creamy-white suffused

pink, the edges of the petals occasionally flushed peach; flowers large, full, perfect in form, with high pointed center. A magnificent rose. Has been awarded many medals.

Francisca Kruger. TEA. An exquisite rose, blooming very freely in the autumn; buds and flowers of excellent form; coppery yellow, shaded with peach. A fine acquisition.

Franz Deegen.

HYBRID TEA. A magnificent rose and will certainly

STANDARD OR TREE ROSE. PAGE 102.

prove worthy of extensive cultivation. A seedling of Kaiserin Augusta Victoria, it retains its fine form but is a deep orange yellow color, merging to creamy white in the outer petals. A most vigorous grower.

Frau Carl Druschki. (*Snow Queen*) HYBRID PERPETUAL. Of all the roses of recent introduction none have created the sensation that this one has. It is of German origin and a remarkably vigorous grower. Its flowers are very large, perfect in form, of the purest snow-white color, with large shell-shaped petals. A very free bloomer. It must be seen to be appreciated.

Hugh Dickson. HYBRID PERPETUAL. A vigorous grower, with handsome foliage; sending up strong, vigorous canes surmounted with blooms of a brilliant crimson, shaded scarlet; very large and of exquisite form with large smooth petals. A most beautiful rose.

Killarney. HYBRID TEA. A vigorous grower with so many good points in its favor that it is regarded as a standard. Color flesh shaded white, suffused pale pink; the

blooms are large, the buds very long and pointed; petals very large and of great substance; one of the finest for massing.

Lady Battersea. (*Red Kaiserin*.) HYBRID TEA. Beautiful cherry crimson, permeated with an orange shade; buds long and pointed, very full and carried on long stems, beautiful for cutting; vigorous erect habit.

Madame Jean Dupuy. TEA. A superb rose; golden yellow, center rosy yellow, edges of petals bordered rose, buds long and pointed; flowers large, full and beautiful form.

Madame Vermorel. TEA. A grand rose and one of the best of its color ever introduced; color coppery yellow centre shaded red; blooms large, full and perfectly formed.

Madame Wagram. (*Comtesse de Turenne*.) (*Climbing Paul Neyron*) TEA. This is a magnificent climber and a very profuse bloomer; flowers very large and well formed, satiny rose, shaded flesh pink. No collection should be without it.

Muriel Graham. TEA. A sport from Catherine Mermet. Pale cream faintly flushed with rose, buds long and pointed, produced on strong stiff canes; fine when fully opened; in every way superior to its parent.

Peace. TEA. A lovely rose and as free in its production of flowers as the well known rose Marie Van Houtte. In color it is a pale lemon yellow; buds very long and pointed and expanding into a large, broad

petaled flower of great substance and beauty. It promises to rank among the best of the new roses.

Perle von Godesburg. HYBRID TEA. A sport from Kaiserin Augusta Victoria, with all the good points of its parent; flowers deep yellow merging to cream in the outer portions of the petals. A magnificent rose, should be in every collection.

Richmond. HYBRID TEA. One of the best red roses yet produced and a perfect forcing rose. It comes to perfection with very little care. It is a constant bloomer, very fragrant, with a color approaching a deep scarlet in tone. It has long pointed buds on tall straight stems, with elegant dark foliage. A superb rose in every sense of the word.

Rosalind Orr. HYBRID TEA. This new pink seedling of bright pure scarlet pink, like a perfect Lawson carnation, with pointed buds and petals beautifully rolled; produced on long, slender stems, has qualities which places it in the front rank among the many new and grand roses of recent introduction.

Schneikopf. POLYANTHA. Snow-white, produced in large clusters, bushy and erect; flowers large, very full, of excellent form and always opening well. Splendid for massing.

Soleil d'Or. MISCELLANEOUS. A hybrid of Persian Yellow. Conical shaped buds opening to large, globular flowers, varying from gold to reddish gold, shaded with nasturtium red. A very striking novelty.

Wellesley. HYBRID TEA. Beautiful shade of pink, bright and clear, large, full and fine form. It produces quantities of beautifully formed buds and flowers.

GENERAL COLLECTION.

Abel Carriere. HYBRID PERPETUAL. Purple crimson, fiery red center; very double and fine.

Admiral Dewey. HYBRID TEA. A strong grower, semi-double flowers of the Testout type; white faintly tinged with pink. A most excellent rose of recent introduction.

Agrippina. BENGAL. Fine, rich crimson; moderately double; fine in bud; a valuable bedding variety; is not affected by the heat, and blooms profusely during the entire summer; as a hedge rose it cannot be surpassed.

Alice Leroy. Moss. Rich glossy pink; very sweet.

American Beauty. HYBRID PERPETUAL. Color rosy crimson, exquisitely shaded and very handsome; extra large full

flowers, exceedingly sweet; makes magnificent buds; is a constant bloomer and a grand forcing rose.

Annie Marie de Montravel. POLYANTHA. Very small, pure white, double flowers; very sweet scented, and borne in large clusters completely covering the plant.

Augustine Guinoiseau. HYBRID TEA. (*White La France*.) A beautiful rose, same form as La France, but pearly white, tinted with fawn. When known, it will be even more popular than La France.

Baroness Rothschild. HYBRID PERPETUAL. Pale bright rose, shaded white; very large and finely formed; flowers borne on erect thick canes, and are closely set in the foliage; very handsome and attractive; one of the best of the Hybrid Perpetuals.

Beauty of Europe. TEA. A vigorous grower and free bloomer; flowers light yellow, shading to salmon fawn and flesh color toward the outer edge of the petal; large and full.

Beauty of Glazenwood. (*San Rafael Rose. Fortunes Yellow*.) MISCELLANEOUS. A vigorous fast climber,



FRAU CARL DRUSCHKI. SNOW QUEEN.

sending forth a mass of bloom in the early spring, being a combination of copper, carmine and salmon yellow. When in full bloom, it is a sight not soon forgotten. Entirely distinct from Gold of Ophir.

Beauty of Stapleford. HYBRID TEA. Color a clear, bright pink, shading to a bright rosy-crimson; it makes large beautiful buds; a constant and profuse bloomer.

Belle Siebrecht. HYBRID TEA. A superb rose; the buds are beautifully formed, of long tapering shape and when half blown the petals reflex in a graceful manner; the flowers have great substance and the petals are of heavy texture; color imperial pink.

Black Prince. HYBRID PERPETUAL. Deep, dark crimson, richly shaded; very globular and good.

Bon Silene. TEA. Very fine in bud; dark crimson rose, often changing to crimson; extensively grown by florists for its highly colored buds.

Bougere. TEA. Flowers extra large; bronze pink, shaded with lilac; a grand rose.

Bridesmaid. TEA. A sport from Catherine Mermet. This new variety has all the good qualities of its parent, but is of a deeper shade clear bright pink and is a more constant bloomer.

Camoens. TEA. Large flowers; bright China rose, shaded yellow; very pretty in bud; a constant bloomer. Very fine in the fall.

Captain Christy. HYBRID PERPETUAL. A lovely rose, blooming almost the entire season; very large double buds of a deep flesh color; strong grower and grand foliage; very beautiful and valuable.

Catherine Mermet. TEA. Light flesh-colored; large, full and globular; one of the finest Teas; when the flowers are fully expanded they yield a delightful perfume.

Celine Forrestier. NOISETTE. Deep sulphur-yellow; a very abundant bloomer; a beautiful rose and a vigorous grower and climber.

Cherokee, Double. MISCELLANEOUS. Flowers double; pure white. Rampant climber.

Cherokee, Single. MISCELLANEOUS. A beautiful pure white rose, large, clear white, single flowers, full of bright yellow stamens, giving it a most unique appearance; foliage dark rich green. A grand climber.

Cheshunt Hybrid. HYBRID TEA. Cherry carmine; large, full open flowers; an excellent climbing or pillar rose.

Christine de Noe. TEA. A splendid grower, with bright, deep green foliage; a constant and free bloomer; flowers deep pink, full and fine; a grand forcing rose.

Climbing Captain Christy. HYBRID PERPETUAL. Of climbing habit, flowers same as Captain Christy; a very profuse bloomer; one of the best of the new roses.

Climbing Devoniensis. TEA. Creamy white, center ometimes with blush; very large, nearly full; delightfully cented.

Climbing Hermosa. BOURBON. Identical in every way with Hermosa, except that it is a rampant climber. It should be extensively planted on account of its many meritorious qualities.

Climbing Kaiserin Augusta Victoria. HYBRID TEA. Said to be the very best climbing white rose of recent introduction; a strong and rapid grower, making shoots fifteen feet in a season; flowers superb, of good texture and substance, extra large, deep and full, very double, and are produced on long stiff stems; buds long and pointed; deliciously fragrant.

Climbing la France. HYBRID TEA. A sport from the La France, resembling it in every particular. A strong rapid grower, producing large, delicate, silvery pink flowers in great abundance.

Climbing Meteor. HYBRID TEA. Climbing Meteor is the acme of all red climbing roses. It is a free, persistent bloomer and will make a growth of from ten to fifteen feet in a season. At the head of the list of all roses for summer blooming, loaded with deep, rich red flowers all the time.

Climbing Niphotos. TEA. A sport of the Niphotos; flowers identical; a very vigorous climbing plant; a much stronger grower than its parent.

Climbing Perle des Jardins. TEA. Same as the Perle des Jardins, except in growth, it being a very vigorous climber.

Climbing Wootton. HYBRID TEA. A sport from the famous rose Souvenir de Wootton and identical with it, except that it is a strong, rampant climber, producing in wonderful profusion, superbly formed flowers, with thick, leathery petals, which are deliciously scented; as a climbing rose it will rank among the best.

Cloth of Gold. NOISETTE. Deep yellow center, edges sulphur, very sweet scented; a magnificent variety. A grand climber.

Clothilde Soupert. POLYANTHA. Medium size, very double and beautifully imbricated like an aster; flowers variable; color glowing pink center, shaded to white; red and white flowers often produced on the same plant; one of the most valuable roses of recent introduction.

Comtesse de Frigneuse. TEA. A beautiful rose, deep golden yellow; flowers extra large and full, with long pointed buds; good grower and bloomer.

Comtesse Riza du Parc. TEA. A fine variety; color bright coppery rose, tinged and shaded with soft velvety crimson; a profuse bloomer.

Cornelia Cook. TEA. Pale yellowish-white sometimes tinged with flesh; flowers large and full; a free bloomer, buds of immense size and very double.

Crimson Rambler. POLYANTHA. From Japan. The flowers are produced in great pyramidal panicles or trusses, each carrying from 30 to 40 blooms, the individual flowers measuring about one to one and a half inches in diameter and remaining perfect on the plant upwards of two weeks.

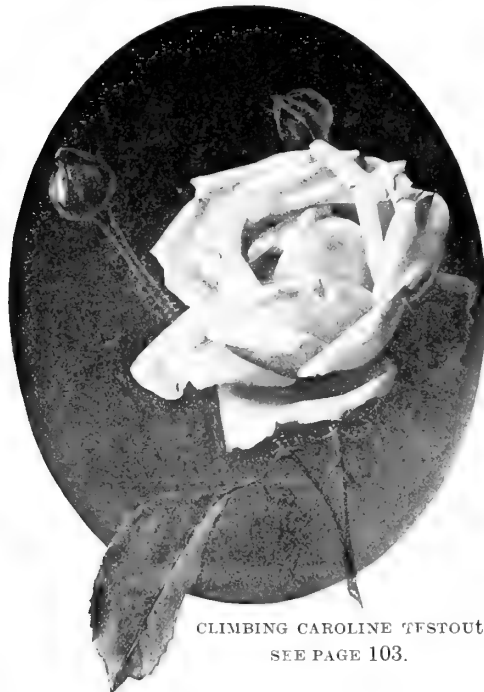


BELLE SIEBRECHT.

with the freshness of color unimpaired; a remarkably vigorous grower and climber, making shoots from 10 to 15 feet long in a season.

Docteur Grill. TEA. Clear buff pink, passing to a clear fawn, elegantly suffused with pale canary yellow. A profuse bloomer.

Dorothy Perkins. NEW. WICHURIANA. Clear shell pink, flowers profusely borne in numerous clusters, full and double, with crinkled petals. Leaves bright green and very persistent. A grand rose for training or for ground work.



CLIMBING CAROLINE TESTOUT
SEE PAGE 103.

Duchesse de Brabant. TEA. Brilliant rosy pink; globular; standard tea; in every way a charming rose.

Duchess of Albany or Red la France. HYBRID TEA. A sport from the La France. Resembles that variety, but the bud is more perfect in contour and the color is of a richer, deeper, more even pink tint; one of the most important of recent acquisitions for forcing or growing in the open air.

Duke of Edinburgh. HYBRID PERPETUAL. A very free bloomer, dark velvety maroon; large size, full, regular form; very handsome and fragrant.

Eliza Sauvage. TEA. Very large, double, globular flowers; color pale yellow to white, with orange center.

Empereur du Maroc. HYBRID PERPETUAL. One of the most perfect of the dark roses; color rich velvety maroon, intensely, dark

Enchantress. NEW. TEA. A free blooming rose, of vigorous growth and fine foliage; color creamy-white, slightly tinted with buff in center.

Etoile de Lyon. TEA. This is considered one of the finest yellow bedding roses for outside planting; one of the hardest in the Tea section; blooms freely, and every flower is a gem; equals Marechal Niel in size, on strong bushes; color a deep chrome yellow; a remarkable rose, deserving extensive culture.

General Jacqueminot. HYBRID PERPETUAL. Bright shining crimson, very rich and velvety, exceedingly brilliant and handsome; makes magnificent buds; one of the best for open ground and for forcing.

Gloire de Dijon. TEA. Buff, orange center, large and double; sweet scented, early flowering and the hardest of any of the tea roses; a popular variety. A good strong climber.

Gloire Lyonnaise. HYBRID TEA. A grand rose. Color a pale shade of chamois or salmon yellow, deepest at the center, and sometimes passing to rich creamy-white, finely tinted with orange and fawn; flowers have all the beauty of Tea Roses and are very fragrant.

Gold of Ophir. NOISSETTE. A medium-sized rose, blooming in clusters; of a very singular color, entirely different from any other rose known, being a bright coppery red, petals edged yellow. A vigorous climber.

Greville or Seven Sisters. PRAIRIE. Flowers in large clusters; varies in color from white to crimson. A strong climber.

Gruss an Teplitz. NEW. BOURBON. (*Crimson Hermosa*.) A rose that every florist should have, inasmuch as it is easy to propagate and a color that is always in demand. When first opened it is a rich dark crimson quickly changing to a velvety fiery red. A strong grower blooms continuously, flowers good size and delightfully fragrant.

Helen Gould, or Balduin. NEW. HYBRID TEA. Not only ourselves, but the general public, believe this rose to be one of the best ever-blooming roses ever introduced. Its color is quite attractive, being a soft intense carmine, with shades of cerise and sulferino, very much the color of American Beauty. Blooms very freely.



MAMAN COCHET. SEE PAGE 107.

Hermosa. BOURBON. An old variety; very double and perfect; color delicate rose; a very abundant bloomer.

Homer. TEA. Flesh-colored rose, edged with velvety lilac rose; one of the best teas; very vigorous and perfect.

Improved Rainbow. TEA. It is entirely distinct and far superior to Rainbow. The improved Rainbow is penciled with brightest Gontier color, every petal in every flower and base of petals of a bright amber color, making a very distinct and charming flower.

Ivory. TEA. A sport from the fine old variety Golden Gate. Ivory embodies all the good points of its parent.

size, freedom of bloom, a pure white color, which makes it an invaluable acquisition; a rather poor grower.

James Veitch. Moss. A very fine bloomer; color dark velvety crimson; one of the best roses.

Jubilee. New. Hybrid Perpetual. A splendid large-flowered variety of intense coloring, fiery maroon crimson, often almost black.

Kaiserin Augusta Victoria. Hybrid Tea. This beautiful rose has not only a royal name, but is a royal rose as well; is a grand white rose, blooming continuously, with large petals of best substance, showing no center when fully open; color pure ivory white; one of the finest roses for corsage wear, or any other use to which flowers can be put.

Madame de Watteville. Tea. A grand new rose; color salmon white, tinged with carmine, each petal bordered with bright rose, like a tulip; fine perfume and a most prolific bloomer.

Madame Gabriel Luizet. Hybrid Perpetual. A beautiful large rose, with broad shell-like petals; very double and full and delightfully perfumed; color an exquisite shade of clear coral rose, beautifully suffused with lavender and pearl.

Madame Maurice Kuppenheim. Tea. Flowers elegantly formed, large, full and double; color pale canary yellow, shaded with rose, sometimes soft rosy flesh; very fragrant.



KAISERIN AUGUSTA VICTORIA.

La France. Hybrid Tea. One of the finest of roses; the color is a most lovely rose, with silvery luster; it is a constant bloomer, and very sweet-scented.

Lamarque. Noisette. Pure white, with shaded sulphur-yellow center, a magnificent climber and a most popular rose.

Louis van Houtte. Hybrid Perpetual. Rich crimson; good globular shape; one of the best dark roses.

Madame Alfred Carriere. Noisette. One of the strongest and most vigorous growing roses; very fine in bud; color white, shaded yellow at the center. An exceedingly strong climber.

Madame Berard. Tea. A magnificent rose; color rich salmon, tinged with rosy yellow; a strong, vigorous grower and profuse bloomer, a fine climber.

Madame Caroline Testout. Hybrid Tea. One of the best Hybrid Tea roses up to date. It is clear pink and there is nothing in the rose line that can approach it in color; the flower is as large as Baroness Rothschild and as free as La France; should have a place in every collection.

Madame Chedanne Guinoisseau. Tea. A fine deep yellow, beautiful, free flowering sort; buds long and pointed; a valuable and exceedingly beautiful variety.

Madame Cusin. Tea. Crimson, with light center, slightly tinted with violet; medium size, good form, quite distinct.

Madame Plantier. Miscellaneous. Fine, pure white; blooming in Spring; above medium size; one of the best white roses; very sweet. A very vigorous climber.

Mademoiselle Cecile Brunner. Polyantha. Blooms salmon pink, with deep salmon center, borne in clusters, very small, full and delicately scented; admirable in bud and open flower; a very profuse bloomer.

Maman Cochet. Tea. One of the finest roses of recent introduction from France; a vigorous grower, with beautiful foliage; the bud is long and pointed, borne on long, stiff stems; color deep rose-pink, the inner petals being a silver-rose, shaded and touched with golden yellow; a beautiful rose.

Marchioness of Londonderry. New. Hybrid Perpetual. One of the late introductions of the Messrs. Dickson & Sons, of Newtownards, Ireland. Flowers of great size, measuring five inches across, perfectly formed, and carried on stout stems; color ivory white; petals of great substance, shell-shaped and reflexed; free flowering; highly perfumed; growth vigorous and foliage very handsome.

Marechal Niel. Noisette. A beautiful deep sulphur-yellow rose; large globular, very full and highly scented; the finest yellow rose in existence. A magnificent climber.

Marie Bauman. Hybrid Perpetual. Crimson-vermillion, suffused carmine; large, full of exquisite color and form; fragrant; a very beautiful rose.

Marie van Houtte. TEA. Canary yellow, with the border of the petals tipped with bright rose; large, full and fine form; a most charming sort and one of the best of its class.

Medea. TEA. A grand rose, of fine form in bud and when in full bloom; lemon yellow, with canary yellow centre. Deserves a place in every garden.

Merveille de Lyon. HYBRID PERPETUAL. Flower large, double and perfectly cupped; purest white; a seedling from Baroness Rothschild.

Meteor. HYBRID TEA. A reliable everbloomer of the deepest glowing crimson; flowers very double, and petals slightly recurved; a beautiful open rose, a vigorous grower and very fine bloomer; a grand rose in this climate.

blooms retain their freshness for a much longer period and it blooms later. It is fully as free a grower and climber and is a very resplendent bloomer.

Pink Soupert. POLYANTHA. A seedling from Clothilde Soupert, which it resembles very closely except in color which is a bright clear pink.

Prairie Queen. PRAIRIE. Flowers are very large, and of a peculiar globular form; color a bright rosy red, changing to lighter as the flower opens; a strong, rapid climber.

Prince Camille de Rohan or La Rosier. HYBRID PERPETUAL. Very dark crimson; one of the best dark roses; unexcelled in every respect.

Queen of Edgely. HYBRID PERPETUAL. (*Pink American Beauty*.) A sport from the famous American Beauty-



LAMARQUE. SEE PAGE 107.

Mignonette. POLYANTHA. One of the most lovely and beautiful miniature roses; flowers very small, double; color delicate rose, changing to blush; a strong grower and very free bloomer; very fragrant.

Mrs. Pierpont Morgan. TEA. A sport from Mad. Cusin, but much superior to it. The long-stemmed buds and flowers are elegantly shaped, fragrant, and of fine substance; color intense bright cerise or rosy pink.

Niphetos. TEA. Pure white; very large and full; long pointed buds; very free flowering; purest of white roses; very attractive in the bud form.

Papa Gontier. TEA. A magnificent bold flower; finely formed buds, color brilliant carmine, changing to rose and lilac; in brilliancy of color fully equal to Gen. Jacqueminot; it is delightfully fragrant and is the most popular forcing rose of its color.

Paul Neyron. HYBRID PERPETUAL. Deep rose; the largest of all roses; very fine and showy; somewhat fragrant.

Perle des Jardins. TEA. Very large and full, bright straw, sometimes canary color; very fragrant; one of the best Tea Roses; one of the most popular forcing roses.

Persian Yellow. MISCELLANEOUS. The deepest golden yellow of all roses; should not be pruned.

Philadelphia Rambler. NEW. POLYANTHA. It differs from Crimson Rambler in these important points: the color is deeper and more intense; the flowers are perfectly double to the center, very durable and of the fine substance; the

resembling it in every particular, except that the flowers are a beautiful cerise pink. It is a strong vigorous grower and its flowers are produced on vigorous stems. A great rose standing as a new creation with a type distinctly its own.

Reine Marie Henriette. HYBRID TEA. Large, finely formed flowers; color a beautiful cherry-red; flowers tea-scented; a very pretty and deservedly popular climbing rose.

Reine Olga de Wurtemberg. HYBRID TEA. A very strong climber and one of the best for covering porches and trellises; color a rosy-carmine; very pretty in the bud.

Reve d'Or. TEA. Very similar to Safrano, but climbing; very fine; will grow in almost any soil.

Rubens. TEA. White, delicately tinted with rose; beautiful in form; a capital grower; a free bloomer; an excellent rose.

Rugosa alba. RUGOSA. Single, pure white flowers of five petals; highly scented; elegant.

Rugosa rubra. RUGOSA. Flowers single, of a most beautiful bright rosy crimson, succeeded by large berries of a rich rosy red color, which are a great addition to the ornamental character of the plant.

Safrano. TEA. A magnificent rose; color, deep fawn, changing to light fawn when fully opened.

Salamander. HYBRID PERPETUAL. Bright scarlet-crimson; very vivid in summer; very free bloomer; a brilliant and most effective rose

Snowflake. TEA. A vigorous grower and by far the most profuse bloomer of the Tea Roses; color pure white; for forcing and as a pot plant, it can not be excelled; a grand rose for floral designs.

Souvenir d'un Ami. TEA. Standard sort; globular; flowers brilliant rose.

Souvenir de la Malmaison. BOURBON. Clear flesh, edged bluish, very large and double; deliciously scented and beautiful.

Souvenir de Paul Neyron. TEA. Creamy white shaded and edged with salmon rose; flowers double, full, very fragrant; free bloomer.

Souvenir de President Carnot. NEW. HYBRID TEA. One of the finest of garden roses; flower is of large size, of exquisite shape, with heavy, thick, shell-like petals, retaining its magnificent shape when full blown; bud long and pointed, borne on stiff, erect stems; color delicate, rosy flesh, shaded a trifle deeper at the center.

Sunset. TEA. A fine novelty, a sport from Perle des Jardins which it strongly resembles, except in color, which is a remarkable shade of rich golden amber, elegantly tinged and shaded with dark ruddy copper, intensely beautiful, and resembling in color a splendid "after glow;" very fragrant.

The Bride. TEA. A sport of Catherine Mermet. Pure white, large fine form, very fragrant; free bloomer; buds very full and double; a beautiful rose, and should have a place in every collection.

The Queen. TEA. (*Souv. de S. A. Prince*). A beautiful pure white sport from Souvenir d'un Ami; finely formed buds, showing the center but slightly when open; petals thick, and of good substance; opens well; is very sweet and has proved to be a valuable acquisition to the list of pure white roses.

Ulrich Brunner. Brilliant cherry red; a very effective color. Flowers fine form and finish, carried well upon the plant. Petals of great substance. A very valuable rose.

White Banksia. BANKSIA. Small, double white flowers in clusters; very fragrant. A fine pillar rose.

White Bath. Moss. Large, full and very fragrant; color pure white, sometimes delicately shaded with rosy bluish; elegantly mossed and very beautiful.

White Maman Cochet. TEA. The flowers are of enormous size, remarkably round and full, pure, clear snowy white throughout when grown under glass; but when grown out of doors it pinks like Bride, but the pink only adds to its beauty. It is by far the finest and most reliable bedding rose yet produced. Its buds are long and pointed, with petals daintily reflexed. An exact counterpart of the famous Maman Cochet in everything except color.

White Rambler. POLYANTHA. A rank grower having the same habit and characteristics as the Crimson Rambler, except that the flowers are white.

Wichuriana. WICHURIANA. (*The Japanese Trailing Rose*.) This pretty novelty is a most valuable plant for covering embankments, rockeries, etc., and particularly for use in cemeteries; it is a low, trailing species, its

stems creeping on the ground almost as closely as the Ivy; foliage small, dark green, lustrous; flowers are produced in July, and are small, single pure white and very fragrant.

Wm. Allen Richardson. NOISETTE. Beautiful orange-yellow; flowers medium but very showy and distinct; very fine and floriferous. A valuable climber.

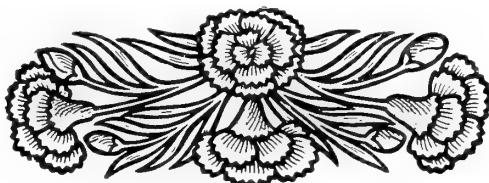


ULRICH BRUNNER.

Xavier Olibo. HYBRID PERPETUAL. A magnificent rose of fine color; one of the very best; its shade of violet-crimson is not to be found in any other rose; finest of all dark red roses.

Yellow Banksia. BANKSIA. Flowers large, but not so fragrant as White Banksia. A wonderful climber.

Yellow Rambler. POLYANTHA. Characteristics identical with the Crimson Rambler and producing flowers in large clusters; blooms are large, full and double, very fragrant and of a decided golden-yellow color; will undoubtedly become the most popular of the Ramblers.



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